



EUROPEAN COMMISSION
Directorate-General for Research and Innovation
Industrial Technologies
Coal and Steel

GRANT AGREEMENT

NUMBER — 847299 — RAFF

This **Agreement** ('the Agreement') is **between** the following parties:

on the one part,

the **European Union** ('the EU'), represented by the European Commission ('the Commission'),

represented for the purposes of signature of this Agreement by Acting Head of Unit, DIRECTORATE-GENERAL RESEARCH & INNOVATION, Industrial Technologies, Administration and finance, Jochen BRODERSEN,

and

on the other part,

1. 'the coordinator':

POLTEGOR INSTYTUT INSTYTUT GORNICTWA ODKRYWKOWEGO-POLTEGOR INSTITUTE INSTITUTE OF OPENCAST MINING (Poltegor), 0000096934/006333984, established in UL. PARKOWA 25, WROCLAW 51 616, Poland, PL8960005532 represented for the purposes of signing the Agreement by Director, Jacek SZCZEPINSKI

and the following other beneficiaries, if they sign their 'Accession Form' (see Annex 3 and Article 56):

2. **VYZKUMNY USTAV PRO HNEDE UHLI AS (VUHU MOST) AS**, 44569181, established in TR. BUDOVATELU 2830/3, MOST 434 01, Czech Republic, CZ44569181

3. **POLYTECHNEIO KRITIS (TUC) GR2**, 197746, established in TERMA AGIOU MARKOU PLATEIA AGIOU TITOU, CHANIA 73132, Greece, EL090034024

4. **INSTITUT NATIONAL DE L ENVIRONNEMENT ET DES RISQUES INERIS (INERIS)**, 381984921, established in Parc Technologique Alata, VERNEUIL EN HALATTE 60550, France, FR73381984921

5. **ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS (CERTH) GR8**, PD772000, established in CHARILAOU THERMI ROAD 6 KM, THERMI THESSALONIKI 57001, Greece, EL099785242

6. **THE UNIVERSITY OF NOTTINGHAM (UoN)**, established in University Park, NOTTINGHAM NG7 2RD, United Kingdom, GB690391225

7. **GLOWNY INSTYTUT GORNICHTWA (GIG)**, 0000090660/000023461, established in Plac Gwarkow 1, KATOWICE 40-166, Poland, PL6340126016

8. **UNIVERSITATEA DIN PETROSANI (FME-UP)**, established in UNIVERSITATII STREET 20, PETROSANI 332006, Romania, RO4374849

9. **PALIVOVY KOMBINAT USTI STATNI PODNIK (PKU) SP**, 00007536, established in HRBOVICKA 2, CHLUMEC 40339, Czech Republic, CZ00007536

10. **CTL MACZKI-BOR SPOLKA AKCYJNA (CTL) SA**, 271569626, established in UL. DLUGA, NR 90, SOSNOWIEC 41-208, Poland, PL6440513586

11. **SUBTERRA INGENIERIA SL (SUBTERRA)**, M473178, established in CALLE VALLEHERMOSO 30 BAJO A, MADRID 28015, Spain, ESB85588549

12. **SOCIETATEA COMPLEXUL ENERGETIC OLTENIA SA (OLTENIA) SA**, J1831131052012, established in STRADA ALEXANDRU IOAN CUZA 5, TARGU JIU GORJ 210227, Romania, RO30267310

Unless otherwise specified, references to ‘beneficiary’ or ‘beneficiaries’ include the coordinator.

The parties referred to above have agreed to enter into the Agreement under the terms and conditions below.

By signing the Agreement or the Accession Form , the beneficiaries accept the grant and agree to implement it under their own responsibility and in accordance with the Agreement, with all the obligations and conditions it sets out.

The Agreement is composed of:

Terms and Conditions

Annex 1	Description of the action
Annex 2	Estimated budget for the action
Annex 3	Accession Forms
Annex 4	Model for the financial statements
Annex 5	Model for the certificate on the financial statements
Annex 6	Not applicable

TERMS AND CONDITIONS

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CHAPTER 1 GENERAL

ARTICLE 1 — SUBJECT OF THE AGREEMENT

This Agreement sets out the rights and obligations and the terms and conditions applicable to the grant awarded to the beneficiaries for implementing the action set out in Chapter 2.

CHAPTER 2 ACTION

ARTICLE 2 — ACTION TO BE IMPLEMENTED

The grant is awarded for the action entitled '**RISK ASSESSMENT OF FINAL PITS DURING FLOODING — RAFF**' ('**action**'), as described in Annex 1.

ARTICLE 3 — DURATION AND STARTING DATE OF THE ACTION

The duration of the action will be **36 months** as of the first day of the month following the date the Agreement enters into force (see Article 58) ('**starting date of the action**').

ARTICLE 4 — ESTIMATED BUDGET AND BUDGET TRANSFERS

4.1 Estimated budget

The '**estimated budget**' for the action is set out in Annex 2.

It contains the estimated eligible costs and the forms of costs, broken down by beneficiary and budget category (see Articles 5, 6).

4.2 Budget transfers

The estimated budget breakdown indicated in Annex 2 may be adjusted by transfers of amounts between beneficiaries or between budget categories (or both). This does not require an amendment according to Article 55, if the action is implemented as described in Annex 1.

However, the beneficiaries may not add costs relating to subcontracts not provided for in Annex 1, unless such additional subcontracts are approved by an amendment or in accordance with Article 13.

Moreover, the coordinator must notify the Commission — before the end of the last reporting period (see Article 20) — if a beneficiary's direct personnel costs are expected to exceed the amount set out in Annex 2 by 20% or more.

CHAPTER 3 GRANT

ARTICLE 5 — GRANT AMOUNT, FORM OF GRANT, REIMBURSEMENT RATE AND FORMS OF COSTS

5.1 Maximum grant amount

The '**maximum grant amount**' is **EUR 2,050,532.37** (two million fifty thousand five hundred and thirty two EURO and thirty seven eurocents).

5.2 Form of grant, reimbursement rates and forms of costs

The grant reimburses **60% of the action's eligible costs** (see Article 6) ('**reimbursement of eligible costs grant**') (see Annex 2).

The estimated eligible costs of the action are **EUR 3,417,553.95** (three million four hundred and seventeen thousand five hundred and fifty three EURO and ninety five eurocents).

Eligible costs (see Article 6) must be declared under the following forms ('**forms of costs**')

- (a) for **direct personnel costs** ('staff costs') as actually incurred costs ('actual costs');

Personnel **costs for SME owners or beneficiaries that are natural persons** not receiving a salary (see Article 6.2, Points A.4 and A.5) must be declared on the basis of the amount per unit set out in Annex 2 (**unit costs**);

- (b) for **direct costs for subcontracting**: as actually incurred costs (**actual costs**);

- (c) for **direct costs of providing financial support to third parties**: not applicable;

- (d) for **other direct costs**: as actually incurred costs (**actual costs**);

- (e) for **indirect costs**: on the basis of a flat-rate applied as set out in Article 6.2, Point E ('**flat-rate costs**');

- (f) **specific cost category(ies)**: not applicable.

5.3 Final grant amount — Calculation

The '**final grant amount**' depends on the actual extent to which the action is implemented in accordance with the Agreement's terms and conditions.

This amount is calculated by the Commission — when the payment of the balance is made (see Article 21.4) — in the following steps:

Step 1 – Application of the reimbursement rate to the eligible costs

Step 2 – Limit to the maximum grant amount

Step 3 – Reduction due to the no-profit rule

Step 4 – Reduction due to improper implementation or breach of other obligations

5.3.1 Step 1 — Application of the reimbursement rate to the eligible costs

The reimbursement rate (see Article 5.2) are applied to the eligible costs (actual costs, unit costs and flat-rate costs; see Article 6) declared by the beneficiaries (see Article 20) and approved by the Commission (see Article 21).

5.3.2 Step 2 — Limit to the maximum grant amount

If the amount obtained following Step 1 is higher than the maximum grant amount set out in Article 5.1, it will be limited to the latter.

5.3.3 Step 3 — Reduction due to the no-profit rule

The grant must not produce a profit.

‘**Profit**’ means the surplus of the amount obtained following Steps 1 and 2 plus the action’s total receipts, over the action’s total eligible costs.

The ‘**action’s total eligible costs**’ are the consolidated total eligible costs approved by the Commission.

The ‘**action’s total receipts**’ are the consolidated total receipts generated during its duration (see Article 3).

The following are considered **receipts**:

- (a) income generated by the action;
- (b) financial contributions given by third parties to the beneficiary specifically to be used for costs that are eligible under the action.

The following are however **not** considered receipts:

- (a) income generated by exploiting the action’s results (see Article 28);
- (b) financial contributions by third parties, if they may be used to cover costs other than the eligible costs (see Article 6);
- (c) financial contributions by third parties with no obligation to repay any amount unused at the end of the period set out in Article 3.

If there is a profit, it will be deducted from the amount obtained following Steps 1 and 2.

5.3.4 Step 4 — Reduction due to improper implementation or breach of other obligations — Reduced grant amount — Calculation

If the grant is reduced (see Article 43), the Commission will calculate the reduced grant amount by deducting the amount of the reduction (calculated in proportion to the improper implementation of the action or to the seriousness of the breach of obligations in accordance with Article 43.2) from the maximum grant amount set out in Article 5.1.

The final grant amount will be the lower of the following two:

- the amount obtained following Steps 1 to 3 or
- the reduced grant amount following Step 4.

5.4 Revised final grant amount — Calculation

If — after the payment of the balance (in particular, after checks, reviews, audits or investigations; see Article 22) — the Commission rejects costs (see Article 42) or reduces the grant (see Article 43), it will calculate the ‘**revised final grant amount**’ for the beneficiary concerned by the findings.

This amount is calculated by the Commission on the basis of the findings, as follows:

- in case of **rejection of costs**: by applying the reimbursement rate to the revised eligible costs approved by the Commission for the beneficiary concerned;
- in case of **reduction of the grant**: by calculating the concerned beneficiary’s share in the grant amount reduced in proportion to its improper implementation of the action or to the seriousness of its breach of obligations (see Article 43.2).

In case of **rejection of costs and reduction of the grant**, the revised final grant amount for the beneficiary concerned will be the lower of the two amounts above.

ARTICLE 6 — ELIGIBLE AND INELIGIBLE COSTS

6.1 General conditions for costs to be eligible

‘**Eligible costs**’ are costs that meet the following criteria:

(a) for **actual costs**:

- (i) they must be actually incurred by the beneficiary;
- (ii) they must be incurred in the period set out in Article 3, with the exception of costs relating to the submission of the periodic report for the last reporting period and the final report (see Article 20);
- (iii) they must be indicated in the estimated budget set out in Annex 2;
- (iv) they must be incurred in connection with the action as described in Annex 1 and necessary for its implementation;
- (v) they must be identifiable and verifiable, in particular recorded in the beneficiary’s accounts in accordance with the accounting standards applicable in the country where the beneficiary is established and with the beneficiary’s usual cost accounting practices;
- (vi) they must comply with the applicable national law on taxes, labour and social security, and
- (vii) they must be reasonable, justified and must comply with the principle of sound financial management, in particular regarding economy and efficiency;

(b) for **unit costs**:

- (i) they must be calculated as follows:

{ amounts per unit set out in Annex 2

multiplied by

the number of actual units };

(ii) the number of actual units must comply with the following conditions:

- the units must be actually used or produced in the period set out in Article 3;
- the units must be necessary for implementing the action or produced by it, and
- the number of units must be identifiable and verifiable, in particular supported by records and documentation (see Article 18);

(c) for **flat-rate costs**:

- (i) they must be calculated by applying the flat-rate set out in Annex 2, and
- (ii) the costs (actual costs or unit costs) to which the flat-rate is applied must comply with the conditions for eligibility set out in this Article.

(d) for **lump sum costs**: Not applicable

6.2 Specific conditions for costs to be eligible

Costs are eligible if they comply with the general conditions (see above) and the specific conditions set out below for each of the following budget categories:

- A. direct personnel costs (staff costs);
- B. direct costs of subcontracting;
- C. not applicable;
- D. other direct costs;
- E. indirect costs;
- F. not applicable.

‘Direct costs’ are costs that are directly linked to the action implementation and can therefore be attributed to it directly. They must not include any indirect costs (see Point E below).

‘Indirect costs’ are costs that are not directly linked to the action implementation and therefore cannot be attributed directly to it.

A. Direct personnel costs (staff costs)

Types of eligible personnel costs

A.1 **Personnel costs** are eligible, if they are related to personnel working for the beneficiary under an employment contract (or equivalent appointing act) and assigned to the action (**‘costs for employees (or equivalent)’**). They must be limited to salaries (including during parental leave), social security contributions, taxes and other costs included in the **remuneration**, if they arise from national law or the employment contract (or equivalent appointing act).

They may also include **additional remuneration** for personnel assigned to the action (including payments on the basis of supplementary contracts regardless of their nature), if:

- (a) it is part of the beneficiary's usual remuneration practices and is paid in a consistent manner whenever the same kind of work or expertise is required;
- (b) the criteria used to calculate the supplementary payments are objective and generally applied by the beneficiary, regardless of the source of funding used.

A.2 The **costs for natural persons working under a direct contract** with the beneficiary other than an employment contract are eligible personnel costs, if:

- (a) the person works under the beneficiary's instructions and, unless otherwise agreed with the beneficiary, on the beneficiary's premises;
- (b) the result of the work carried out belongs to the beneficiary, and
- (c) the costs are not significantly different from those for personnel performing similar tasks under an employment contract with the beneficiary.

A.3 The **costs of personnel seconded by a third party against payment** are eligible personnel costs, if:

- (a) the person works under the beneficiary's instructions and, unless otherwise agreed with the beneficiary, on the beneficiary's premises;
- (b) the result of the work carried out belongs to the beneficiary, and
- (c) the costs are not significantly different from those for personnel performing similar tasks under an employment contract with the beneficiary.

A.4 **Costs of owners** of beneficiaries that are small and medium-sized enterprises ('**SME owners**') who are working on the action and who do not receive a salary are eligible personnel costs, if they correspond to the amount per unit set out in Annex 2 multiplied by the number of actual hours worked on the action.

A.5 **Costs of 'beneficiaries that are natural persons'** not receiving a salary are eligible personnel costs, if they correspond to the amount per unit set out in Annex 2 multiplied by the number of actual hours worked on the action.

Calculation

Personnel costs must be calculated by the beneficiaries as follows:

{ hourly rate
multiplied by
the number of actual hours worked on the action }

The number of actual hours declared for a person must be identifiable and verifiable (see Article 18).

The total number of hours declared in EU or Euratom grants, for a person for a year, cannot be higher

than the annual productive hours used for the calculations of the hourly rate. Therefore, the maximum number of hours that can be declared for the grant is:

{ the number of annual productive hours for the year (see below)
minus
total number of hours declared by the beneficiary for that person in that year for other EU or Euratom grants }.

The '**hourly rate**' is one of the following:

- (a) for personnel costs declared as **actual costs**: the hourly rate is the amount calculated as follows:

{ actual annual personnel costs for the person
divided by
number of annual productive hours }.

The beneficiaries must use the annual personnel costs and the number of annual productive hours for each financial year covered by the reporting period. If a financial year is not closed at the end of the reporting period, the beneficiaries must use the hourly rate of the last closed financial year available.

For the 'number of annual productive hours', the beneficiaries may choose one of the following:

- (i) 'fixed number of hours': 1 720 hours for persons working full time (or corresponding pro-rata for persons not working full time);
- (ii) 'individual annual productive hours': the total number of hours worked by the person in the year for the beneficiary, calculated as follows:

{ annual workable hours of the person (according to the employment contract, applicable collective labour agreement or national law)
plus
overtime worked
minus
absences (such as sick leave and special leave) }.

'Annual workable hours' means the period during which the personnel must be working, at the employer's disposal and carrying out his/her activity or duties under the employment contract, applicable collective labour agreement or national working time legislation.

If the contract (or applicable collective labour agreement or national working time legislation) does not allow to determine the annual workable hours, this option cannot be used;

- (iii) 'standard annual productive hours': the 'standard number of annual hours' generally applied by the beneficiary for its personnel in accordance with its usual cost accounting practices. This number must be at least 90% of the 'standard annual workable hours'.

If there is no applicable reference for the standard annual workable hours, this option cannot be used.

For all options, the actual time spent on **parental leave** by a person assigned to the action may be deducted from the number of annual productive hours;

- (b) for personnel costs of SME owners or beneficiaries that are natural persons declared on the basis of **unit costs**, the hourly rate is the hourly rate set out in Annex 2 (see Points A.4 and A.5 above).

B. Direct costs of subcontracting (including related duties, taxes and charges such as non-deductible value added tax (VAT) paid by the beneficiary) are eligible if the conditions in Article 13.1.1 are met.

C. Direct costs of providing financial support to third parties

Not applicable

D. Other direct costs

D.1 Travel costs and related subsistence allowances

Not applicable

- D.2 The **depreciation costs of equipment, infrastructure or other assets** (new or second-hand) as recorded in the beneficiary's accounts are eligible, if they were purchased in accordance with Article 10.1.1 and written off in accordance with international accounting standards and the beneficiary's usual accounting practices.

The **costs of renting or leasing** equipment, infrastructure or other assets (including related duties, taxes and charges such as non-deductible value added tax (VAT) paid by the beneficiary) are also eligible, if they do not exceed the depreciation costs of similar equipment, infrastructure or assets and do not include any financing fees.

The only portion of the costs that will be taken into account is that which corresponds to the duration of the action and rate of actual use for the purposes of the action.

D.3 Operating costs

Operating costs (including related duties, taxes and charges such as non-deductible value added tax (VAT) paid by the beneficiary for:

- raw materials;
- consumables;
- energy;
- transportation of raw materials, consumables, equipment, products, feedstock or fuel;
- the maintenance, repair, alteration and transformation of existing equipment;

- IT and other specific services;
- the rental of equipment;
- analysis and tests;
- dedicated workshop organization;
- certificate on financial statements and bank guarantee;
- protection of knowledge;
- assistance from third parties,

are eligible if they are purchased specifically for the action and in accordance with Article 10.1.1.

D4 Capitalised and operating costs of ‘large research infrastructure’

Not applicable

E. Indirect costs

Indirect costs are eligible if they are declared on the basis of the flat-rate of 35% of the eligible direct personnel costs (see Article 6.2 Point A).

Beneficiaries receiving an operating grant¹ financed by the EU or Euratom budget cannot declare indirect costs for the period covered by the operating grant.

F. Specific cost category(ies)

Not applicable

6.3 Conditions for costs of linked third parties to be eligible

not applicable

6.4 Conditions for in-kind contributions provided by third parties free of charge to be eligible

Not applicable

6.5 Ineligible costs

‘Ineligible costs’ are:

¹ For the definition, see Article 121(1)(b) of Regulation (EU, Euratom) No 966/2012 of the European Parliament and of the Council of 25 October 2012 on the financial rules applicable to the general budget of the Union and repealing Council Regulation (EC, Euratom) No 1605/2002 (OJ L 218, 26.10.2012, p.1) (**‘Financial Regulation No 966/2012’**): **‘operating grant’** means direct financial contribution, by way of donation, from the budget in order to finance the functioning of a body which pursues an aim of general EU interest or has an objective forming part of and supporting an EU policy.

- (a) costs that do not comply with the conditions set out above (Article 6.1 to 6.4), in particular:
 - (i) costs related to return on capital;
 - (ii) debt and debt service charges;
 - (iii) provisions for future losses or debts;
 - (iv) interest owed;
 - (v) doubtful debts;
 - (vi) currency exchange losses;
 - (vii) bank costs charged by the beneficiary's bank for transfers from the Commission;
 - (viii) excessive or reckless expenditure;
 - (ix) deductible VAT;
 - (x) costs incurred during suspension of the implementation of the action (see Article 49);
 - (xi) in-kind contributions provided by third parties;
- (b) costs declared under another EU or Euratom grant (including grants awarded by a Member State and financed by the EU or Euratom budget and grants awarded by bodies other than the Commission for the purpose of implementing the EU or Euratom budget); in particular, indirect costs if the beneficiary is already receiving an operating grant financed by the EU or Euratom budget in the same period.

6.6 Consequences of declaration of ineligible costs

Declared costs that are ineligible will be rejected (see Article 42).

This may also lead to any of the other measures described in Chapter 6.

CHAPTER 4 RIGHTS AND OBLIGATIONS OF THE PARTIES

SECTION 1 RIGHTS AND OBLIGATIONS RELATED TO IMPLEMENTING THE ACTION

ARTICLE 7 — GENERAL OBLIGATION TO PROPERLY IMPLEMENT THE ACTION

7.1 General obligation to properly implement the action

The beneficiaries must implement the action as described in Annex 1 and in compliance with the provisions of the Agreement and all legal obligations under applicable EU, international and national law.

7.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 8 — RESOURCES TO IMPLEMENT THE ACTION — THIRD PARTIES INVOLVED IN THE ACTION

The beneficiaries must have the appropriate resources to implement the action.

If it is necessary to implement the action, the beneficiaries may:

- purchase goods, works and services (see Article 10);
- call upon subcontractors to implement action tasks described in Annex 1 (see Article 13);
- call upon linked third parties to implement action tasks described in Annex 1 (see Article 14).

In these cases, the beneficiaries retain sole responsibility towards the Commission and the other beneficiaries for implementing the action.

ARTICLE 9 — IMPLEMENTATION OF ACTION TASKS BY BENEFICIARIES NOT RECEIVING EU FUNDING

Not applicable

ARTICLE 10 — PURCHASE OF GOODS, WORKS OR SERVICES

10.1 Rules for purchasing goods, works or services

10.1.1 If necessary to implement the action, the beneficiaries may purchase goods, works or services.

The beneficiaries must make such purchases ensuring the best value for money or, if appropriate, the lowest price. In doing so, they must avoid any conflict of interests (see Article 35).

The beneficiaries must ensure that the Commission, the European Court of Auditors (ECA) and the European Anti-Fraud Office (OLAF) can exercise their rights under Articles 22 and 23 also towards their contractors.

10.1.2 Beneficiaries that are ‘contracting authorities’ within the meaning of Directive 2004/18/EC² or ‘contracting entities’ within the meaning of Directive 2004/17/EC³ must comply with the applicable national law on public procurement.

² Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public work contracts, public supply contracts and public service contracts (OJ L 134, 30.04.2004, p. 114).

³ Directive 2004/17/EC of the European Parliament and of the Council of 31 March 2004 coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors (OJ L 134, 30.04.2004, p. 1).

10.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under Article 10.1.1, the costs related to the contract concerned will be ineligible (see Article 6) and will be rejected (see Article 42).

If a beneficiary breaches any of its obligations under Article 10.1.2, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 11 — USE OF IN-KIND CONTRIBUTIONS PROVIDED BY THIRD PARTIES AGAINST PAYMENT

Not applicable

ARTICLE 12 — USE OF IN-KIND CONTRIBUTIONS PROVIDED BY THIRD PARTIES FREE OF CHARGE

Not applicable

ARTICLE 13 — IMPLEMENTATION OF ACTION TASKS BY SUBCONTRACTORS

13.1 Rules for subcontracting action tasks

13.1.1 If necessary to implement the action, the beneficiaries may award subcontracts covering the implementation of certain action tasks described in Annex 1.

Subcontracting may cover only a limited part of the action.

The beneficiaries must award the subcontracts ensuring the best value for money or, if appropriate, the lowest price. In doing so, they must avoid any conflict of interests (see Article 35).

The tasks to be implemented and the estimated cost for each subcontract must be set out in Annex 1 and the total estimated costs of subcontracting per beneficiary must be set out in Annex 2. The Commission may however approve subcontracts not set out in Annex 1 and 2 without amendment (see Article 55), if:

- they are specifically justified in the periodic technical report and
- they do not entail changes to the Agreement which would call into question the decision awarding the grant or breach the principle of equal treatment of applicants.

The beneficiaries must ensure that the Commission, the European Court of Auditors (ECA) and the European Anti-Fraud Office (OLAF) can exercise their rights under Articles 22 and 23 also towards their subcontractors.

13.1.2 The beneficiaries must ensure that their obligations under Articles 35, 36, 38 and 46 also apply to the subcontractors.

Beneficiaries that are ‘contracting authorities’ within the meaning of Directive 2004/18/EC or

‘contracting entities’ within the meaning of Directive 2004/17/EC must comply with the applicable national law on public procurement.

13.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under Article 13.1.1, the costs related to the subcontract concerned will be ineligible (see Article 6) and will be rejected (see Article 42).

If a beneficiary breaches any of its obligations under Article 13.1.2, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 14 — IMPLEMENTATION OF ACTION TASKS BY LINKED THIRD PARTIES

Not applicable

ARTICLE 15 — FINANCIAL SUPPORT TO THIRD PARTIES

Not applicable

ARTICLE 16 — PROVISION OF TRANS-NATIONAL OR VIRTUAL ACCESS TO RESEARCH INFRASTRUCTURE

Not applicable

SECTION 2 RIGHTS AND OBLIGATIONS RELATED TO THE GRANT ADMINISTRATION

ARTICLE 17 — GENERAL OBLIGATION TO INFORM

17.1 General obligation to provide information upon request

The beneficiaries must provide — during implementation of the action or afterwards and in accordance with Article 41.2 — any information requested in order to verify eligibility of the costs, proper implementation of the action and compliance with any other obligation under the Agreement.

17.2 Obligation to keep information up to date and to inform about events and circumstances likely to affect the Agreement

Each beneficiary must keep information stored in the 'Beneficiary Register' (via the electronic exchange system; see Article 52) up to date, in particular, its name, address, legal representatives, legal form and organisation type.

Each beneficiary must immediately inform the coordinator — which must immediately inform the Commission and the other beneficiaries — of any of the following:

- (a) **events** which are likely to affect significantly or delay the implementation of the action or the EU's financial interests, in particular:

- (i) changes in its legal, financial, technical, organisational or ownership situation
- (b) **circumstances** affecting:
 - (i) the decision to award the grant or
 - (ii) compliance with requirements under the Agreement.

17.3 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 18 — KEEPING RECORDS — SUPPORTING DOCUMENTATION

18.1 Obligation to keep records and other supporting documentation

The beneficiaries must — for a period of five years after the payment of the balance — keep records and other supporting documentation in order to prove the proper implementation of the action and the costs they declare as eligible.

They must make them available upon request (see Article 17) or in the context of checks, reviews, audits or investigations (see Article 22).

If there are on-going checks, reviews, audits, investigations, litigation or other pursuits of claims under the Agreement (including the extension of findings; see Articles 22), the beneficiaries must keep the records and other supporting documentation until the end of these procedures.

The beneficiaries must keep the original documents. Digital and digitalised documents are considered originals if they are authorised by the applicable national law. The Commission may accept non-original documents if it considers that they offer a comparable level of assurance.

18.1.1 Records and other supporting documentation on the scientific and technical implementation

The beneficiaries must keep records and other supporting documentation on scientific and technical implementation of the action in line with the accepted standards in the respective field.

18.1.2 Records and other documentation to support the costs declared

The beneficiaries must keep the records and documentation supporting the costs declared, in particular the following:

- (a) for **actual costs**: adequate records and other supporting documentation to prove the costs declared, such as contracts, subcontracts, invoices and accounting records. In addition, the beneficiaries' usual cost accounting practices and internal control procedures must enable direct reconciliation between the amounts declared, the amounts recorded in their accounts and the amounts stated in the supporting documentation;

- (b) for **unit costs**: adequate records and other supporting documentation to prove the number of units declared. Beneficiaries do not need to identify the actual eligible costs covered or to keep or provide supporting documentation (such as accounting statements) to prove the amount per unit.
- (c) for **flat-rate costs**: adequate records and other supporting documentation to prove the eligibility of the costs to which the flat-rate is applied. The beneficiaries do not need to identify the costs covered or provide supporting documentation (such as accounting statements) to prove the amount declared at a flat-rate.

In addition, for **personnel costs** (declared as actual costs or on the basis of unit costs), the beneficiaries must keep **time records** for the number of hours declared. The time records must be in writing and approved by the persons working on the action and their supervisors, at least monthly. In the absence of reliable time records of the hours worked on the action, the Commission may accept alternative evidence supporting the number of hours declared, if it considers that it offers an adequate level of assurance.

As an exception, for **persons working exclusively on the action**, there is no need to keep time records, if the beneficiary signs a **declaration** confirming that the persons concerned have worked exclusively on the action.

18.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, costs insufficiently substantiated will be ineligible (see Article 6) and will be rejected (see Article 42), and the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 19 — SUBMISSION OF DELIVERABLES

19.1 Obligation to submit deliverables

The coordinator must submit the ‘**deliverables**’ identified in Annex 1, in accordance with the timing and conditions set out in it.

19.2 Consequences of non-compliance

If the coordinator breaches any of its obligations under this Article, the Commission may apply any of the measures described in Chapter 6.

ARTICLE 20 — REPORTING — PAYMENT REQUESTS

20.1 Obligation to submit reports

The coordinator must submit to the Commission (see Article 52) the technical and financial reports set out in this Article. These reports include requests for payment and must be drawn up using the forms and templates provided in the electronic exchange system (see Article 52).

20.2 Reporting periods

The action is divided into the following **'reporting periods'**:

- RP1: from month 1 to month 23
- RP2: from month 24 to month 36

20.3 Periodic reports — Requests for interim payments

The coordinator must submit a periodic report within 60 days following the end of each reporting period.

The **periodic report** must include the following:

(a) a **'periodic technical report'** containing:

- (i) an **explanation of the work carried out** by the beneficiaries;
- (ii) an **overview of the progress** towards the objectives of the action, including milestones and deliverables identified in Annex 1.

This report must include explanations justifying the differences between work expected to be carried out in accordance with Annex 1 and that actually carried out.

The report must also detail the exploitation and dissemination of the results and — if required in Annex 1 — an updated **'plan for the exploitation and dissemination of the results'**;

- (iii) a **summary** for publication by the Commission;
- (iv) not applicable;

(b) a **'periodic financial report'** containing:

- (i) an **'individual financial statement'** (see Annex 4) from each beneficiary, for the reporting period concerned.

The individual financial statement must detail the eligible costs (actual costs, unit costs and flat-rate costs; see Article 6) for each budget category (see Annex 2).

The beneficiaries must declare all eligible costs, even if — for actual costs, unit costs and flat-rate costs — they exceed the amounts indicated in the estimated budget (see Annex 2). Amounts which are not declared in the individual financial statement will not be taken into account by the Commission.

If an individual financial statement is not submitted for a reporting period, it may be included in the periodic financial report for the next reporting period.

The individual financial statements of the last reporting period must also detail the **receipts of the action** (see Article 5.3.3).

Each beneficiary must **certify** that:

- the information provided is full, reliable and true;

- the costs declared are eligible (see Article 6);
 - the costs can be substantiated by adequate records and supporting documentation (see Article 18) that will be produced upon request (see Article 17) or in the context of checks, reviews, audits and investigations (see Article 22), and
 - for the last reporting period: that all the receipts have been declared (see Article 5.3.3);
- (ii) an **explanation of the use of resources** and the information on subcontracting (see Article 13) from each beneficiary, for the reporting period concerned;
- (iii) not applicable;
- (iv) a **'periodic summary financial statement'**, created automatically by the electronic exchange system, consolidating the individual financial statements for the reporting period concerned and including — except for the last reporting period — the **request for interim payment**.
- (v) a **'certificate on the financial statements'**, (drawn up in accordance with Annex 5) for each beneficiary, if:
- the (cumulative) amount of payments it requests as reimbursement of actual costs (and for which no certificate has yet been submitted) is EUR 200 000 or more and
 - the maximum grant amount indicated, for that beneficiary, in the estimated budget as reimbursement of actual costs is EUR 750 000 or more.

20.4 Final report — Request for payment of the balance

In addition to the periodic report for the last reporting period, the coordinator must submit the final report within 60 days following the end of the last reporting period.

The **final report** must include the following:

- (a) a **'final technical report'** with a **summary** for publication containing:
- (i) an overview of the results and their exploitation and dissemination;
 - (ii) the conclusions on the action, and
 - (iii) the socio-economic impact of the action;
- (b) a **'final financial report'** containing:
- (i) a **'final summary financial statement'**, created automatically by the electronic exchange system, consolidating the individual financial statements for all reporting periods and including the **request for payment of the balance**

20.5 Information on cumulative expenditure incurred

Not applicable

20.6 Currency for financial statements and conversion into euro

Financial statements must be drafted in euro.

Beneficiaries with accounting established in a currency other than the euro must convert the costs recorded in their accounts into euro, at the average of the daily exchange rates published in the C series of the *Official Journal of the European Union*, calculated over the corresponding reporting period.

If no daily euro exchange rate is published in the *Official Journal of the European Union* for the currency in question, they must be converted at the average of the monthly accounting rates published on the Commission's website, calculated over the corresponding reporting period.

Beneficiaries with accounting established in euro must convert costs incurred in another currency into euro according to their usual accounting practices.

20.7 Language of reports

All reports (technical and financial reports, including financial statements) must be submitted in the language of the Agreement.

20.8 Consequences of non-compliance — Suspension of the payment deadline — Termination

If the reports submitted do not comply with this Article, the Commission may suspend the payment deadline (see Article 47) and apply any of the other measures described in Chapter 6.

If the coordinator breaches its obligation to submit the reports and if it fails to comply with this obligation within 30 days following a written reminder sent by the Commission, the Agreement may be terminated (see Article 50).

ARTICLE 21 — PAYMENTS AND PAYMENT ARRANGEMENTS

21.1 Payments to be made

The following payments will be made to the coordinator:

- one **pre-financing payment**;
- one or more **interim payments**, on the basis of the request(s) for interim payment (see Article 20), and
- one **payment of the balance**, on the basis of the request for payment of the balance (see Article 20).

21.2 Pre-financing payment — Amount

The aim of the pre-financing is to provide the beneficiaries with a float.

It remains the property of the EU until the payment of the balance.

The amount of the pre-financing payment will be EUR **820,212.95** (eight hundred and twenty thousand two hundred and twelve EURO and ninety five eurocents), divided between the beneficiaries as follows:

- Poltegor : EUR 104,583.30 (one hundred and four thousand five hundred and eighty three EURO and thirty eurocents)
- VUHU MOST : EUR 101,349.60 (one hundred and one thousand three hundred and forty nine EURO and sixty eurocents)
- TUC : EUR 83,232.00 (eighty three thousand two hundred and thirty two EURO)
- INERIS : EUR 77,489.16 (seventy seven thousand four hundred and eighty nine EURO and sixteen eurocents)
- CERTH : EUR 87,974.04 (eighty seven thousand nine hundred and seventy four EURO and four eurocents)
- UoN : EUR 120,901.79 (one hundred and twenty thousand nine hundred and one EURO and seventy nine eurocents)
- GIG : EUR 71,124.06 (seventy one thousand one hundred and twenty four EURO and six eurocents)
- FME-UP : EUR 33,652.80 (thirty three thousand six hundred and fifty two EURO and eighty eurocents)
- PKU : EUR 41,853.96 (forty one thousand eight hundred and fifty three EURO and ninety six eurocents)
- CTL : EUR 14,719.20 (fourteen thousand seven hundred and nineteen EURO and twenty eurocents)
- SUBTERRA : EUR 48,806.64 (forty eight thousand eight hundred and six EURO and sixty four eurocents)
- OLTENIA : EUR 34,526.40 (thirty four thousand five hundred and twenty six EURO and forty eurocents)

If all pre-financing guarantees have been provided, the Commission will — except if Article 48 applies — make the pre-financing payment to the coordinator within 30 days either from the entry into force of the Agreement (see Article 58) or from 10 days before the starting date of the action (see Article 3), whichever is the latest. If some pre-financing guarantees are missing, the parts of the pre-financing related to those beneficiaries will be held back and paid to the coordinator once the pre-financing guarantees have been submitted.

21.3 Interim payments — Amount — Calculation

Interim payments reimburse the eligible costs incurred for the implementation of the action during the corresponding reporting periods.

The Commission will pay to the coordinator the amount due as interim payment within 90 days from receiving the periodic report (see Article 20.3), except if Articles 47 or 48 apply.

Payment is subject to the approval of the periodic report. Its approval does not imply recognition of the compliance, authenticity, completeness or correctness of its content.

The **amount due as interim payment** is calculated by the Commission in the following steps:

Step 1 – Application of the reimbursement rates

Step 2 – Limit to 80% of the maximum grant amount

21.3.1 Step 1 — Application of the reimbursement rates

The reimbursement rate(s) (see Article 5.2) are applied to the eligible costs (actual costs, unit costs and flat-rate costs ; see Article 6) declared by the beneficiaries (see Article 20) and approved by the Commission (see above) for the concerned reporting period.

21.3.2 Step 2 — Limit to 80% of the maximum grant amount

The total amount of pre-financing and interim payments must not exceed 80% of the maximum grant amount set out in Article 5.1. The maximum amount for the interim payment will be calculated as follows:

{80% of the maximum grant amount (see Article 5.1)
minus
{pre-financing and previous interim payments } }.

21.4 Payment of the balance — Amount — Calculation

The payment of the balance reimburses the remaining part of the eligible costs incurred by the beneficiaries for the implementation of the action.

If the total amount of earlier payments is greater than the final grant amount (see Article 5.3), the payment of the balance takes the form of a recovery (see Article 44).

If the total amount of earlier payments is lower than the final grant amount, the Commission will pay the balance within 90 days from receiving the final report (see Article 20.4), except if Articles 47 or 48 apply.

Payment is subject to the approval of the final report. Its approval does not imply recognition of the compliance, authenticity, completeness or correctness of its content.

The **amount due as the balance** is calculated by the Commission by deducting the total amount of pre-financing and interim payments (if any) already made, from the final grant amount determined in accordance with Article 5.3:

{final grant amount (see Article 5.3)
minus
{pre-financing and interim payments (if any) made } }.

At the payment of the balance:

- if the balance is positive: the amount due will be paid in full to the coordinator
- if the balance is negative (payment of the balance taking the form of recovery): it will be recovered.

The amount to be paid may however be offset — without the beneficiary's consent — against any other amount owed by the beneficiary to the Commission or an executive agency (under the EU or Euratom budget), up to the maximum EU contribution indicated, for that beneficiary, in the estimated budget (see Annex 2).

21.5 Notification of amounts due

When making payments, the Commission will formally notify to the coordinator the amount due, specifying whether it concerns an interim payment or the payment of the balance.

For the payment of the balance, the notification will also specify the final grant amount.

In the case of reduction of the grant or recovery of undue amounts, the notification will be preceded by the contradictory procedure set out in Articles 43 and 44.

21.6 Currency for payments

The Commission will make all payments in euro.

21.7 Payments to the coordinator — Distribution to the beneficiaries

Payments will be made to the coordinator.

Payments to the coordinator will discharge the Commission from its payment obligation.

The coordinator must distribute the payments between the beneficiaries without unjustified delay.

Pre-financing may however be distributed only:

- (a) if the minimum number of beneficiaries set out in the call for proposals has acceded to the Agreement (see Article 56) and
- (b) to beneficiaries that have acceded to the Agreement (see Article 56).

21.8 Bank account for payments

All payments will be made to the following bank account:

Name of bank: SANTANDER BANK POLSKA SPOLKA AKCYJNA

Address of branch: PL. WOLNOSCI 15 POZNAN, Poland

Full name of the account holder: RAFF RISK ASSESMENT OF FINAL PITS DURING FLOODING

Full account number (including bank codes):

IBAN code: PL7410901522000000141707385

21.9 Costs of payment transfers

The cost of the payment transfers is borne as follows:

- the Commission bears the cost of transfers charged by its bank;
- the beneficiary bears the cost of transfers charged by its bank;
- the party causing a repetition of a transfer bears all costs of the repeated transfer.

21.10 Date of payment

Payments by the Commission are considered to have been carried out on the date when they are debited to its account.

21.11 Consequences of non-compliance

21.11.1 If the Commission does not pay within the payment deadlines (see above), the beneficiaries are entitled to **late-payment interest** at the rate applied by the European Central Bank (ECB) for its main refinancing operations in euros ('reference rate'), plus three and a half points. The reference rate is the rate in force on the first day of the month in which the payment deadline expires, as published in the C series of the *Official Journal of the European Union*.

If the late-payment interest is lower than or equal to EUR 200, it will be paid to the coordinator only upon request submitted within two months of receiving the late payment.

Late-payment interest is not due if all beneficiaries are EU Member States (including regional and local government authorities or other public bodies acting on behalf of a Member State for the purpose of this Agreement).

Suspension of the payment deadline or payments (see Articles 47 and 48) will not be considered as late payment.

Late-payment interest covers the period running from the day following the due date for payment (see above), up to and including the date of payment.

Late-payment interest is not considered for the purposes of calculating the final grant amount.

21.11.2 If the coordinator breaches any of its obligations under this Article, the grant may be reduced (see Article 43) and the Agreement or the participation of the coordinator may be terminated (see Article 50).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 22 — CHECKS, REVIEWS, AUDITS AND INVESTIGATIONS — EXTENSION OF FINDINGS

22.1 Checks, reviews and audits by the Commission

22.1.1 Right to carry out checks

The Commission will — during the implementation of the action or afterwards — check the proper

implementation of the action and compliance with the obligations under the Agreement, including assessing deliverables and reports.

For this purpose the Commission may be assisted by external persons or bodies.

The Commission may also request additional information in accordance with Article 17. The Commission may request beneficiaries to provide such information to it directly.

Information provided must be accurate, precise and complete and in the format requested, including electronic format.

22.1.2 Right to carry out reviews

The Commission may — during the implementation of the action or afterwards — carry out reviews on the proper implementation of the action (including assessment of deliverables and reports), compliance with the obligations under the Agreement and continued scientific or technological relevance of the action.

Reviews may be started **up to five years after the payment of the balance**. They will be formally notified to the coordinator or beneficiary concerned and will be considered to have started on the date of the formal notification.

If the review is carried out on a third party (see Articles 10 to 16), the beneficiary concerned must inform the third party.

The Commission may carry out reviews directly (using its own staff) or indirectly (using external persons or bodies appointed to do so). It will inform the coordinator or beneficiary concerned of the identity of the external persons or bodies. They have the right to object to the appointment on grounds of commercial confidentiality.

The coordinator or beneficiary concerned must provide — within the deadline requested — any information and data in addition to deliverables and reports already submitted (including information on the use of resources). The Commission may request beneficiaries to provide such information to it directly.

The coordinator or beneficiary concerned may be requested to participate in meetings, including with external experts.

For **on-the-spot** reviews, the beneficiaries must allow access to their sites and premises, including to external persons or bodies, and must ensure that information requested is readily available.

Information provided must be accurate, precise and complete and in the format requested, including electronic format.

On the basis of the review findings, a '**review report**' will be drawn up.

The Commission will formally notify the review report to the coordinator or beneficiary concerned, which has 30 days to formally notify observations ('**contradictory review procedure**').

Reviews (including review reports) are in the language of the Agreement.

22.1.3 Right to carry out audits

The Commission may — during the implementation of the action or afterwards — carry out audits on the proper implementation of the action and compliance with the obligations under the Agreement.

Audits may be started **up to five years after the payment of the balance**. They will be formally notified to the coordinator or beneficiary concerned and will be considered to have started on the date of the formal notification.

If the audit is carried out on a third party (see Articles 10 to 16), the beneficiary concerned must inform the third party.

The Commission may carry out audits directly (using its own staff) or indirectly (using external persons or bodies appointed to do so). It will inform the coordinator or beneficiary concerned of the identity of the external persons or bodies. They have the right to object to the appointment on grounds of commercial confidentiality.

The coordinator or beneficiary concerned must provide — within the deadline requested — any information (including complete accounts, individual salary statements or other personal data) to verify compliance with the Agreement. The Commission may request beneficiaries to provide such information to it directly.

For **on-the-spot** audits, the beneficiaries must allow access to their sites and premises, including to external persons or bodies, and must ensure that information requested is readily available.

Information provided must be accurate, precise and complete and in the format requested, including electronic format.

On the basis of the audit findings, a '**draft audit report**' will be drawn up.

The Commission will formally notify the draft audit report to the coordinator or beneficiary concerned, which has 30 days to formally notify observations ('**contradictory audit procedure**'). This period may be extended by the Commission in justified cases.

The '**final audit report**' will take into account observations by the coordinator or beneficiary concerned. The report will be formally notified to it.

Audits (including audit reports) are in the language of the Agreement.

The Commission may also access the beneficiaries' statutory records for the periodical assessment of unit costs or flat-rate amounts.

22.2 Investigations by the European Anti-Fraud Office (OLAF)

Under Regulations No 883/2013⁶ and No 2185/96⁷ (and in accordance with their provisions and

⁶ Regulation (EU, Euratom) No 883/2013 of the European Parliament and of the Council of 11 September 2013 concerning investigations conducted by the European Anti-Fraud Office (OLAF) and repealing Regulation (EC) No 1073/1999 of the European Parliament and of the Council and Council Regulation (Euratom) No 1074/1999 (OJ L 248, 18.09.2013, p. 1).

⁷ Council Regulation (Euratom, EC) No 2185/1996 of 11 November 1996 concerning on-the-spot checks and inspections

procedures), the European Anti-Fraud Office (OLAF) may — at any moment during implementation of the action or afterwards — carry out investigations, including on-the-spot checks and inspections, to establish whether there has been fraud, corruption or any other illegal activity affecting the financial interests of the EU.

22.3 Checks and audits by the European Court of Auditors (ECA)

Under Article 287 of the Treaty on the Functioning of the European Union (TFEU) and Article 161 of the Financial Regulation No 966/2012⁸, the European Court of Auditors (ECA) may — at any moment during implementation of the action or afterwards — carry out audits.

The ECA has the right of access for the purpose of checks and audits.

22.4 Checks, reviews, audits and investigations for international organisations

Not applicable

22.5 Consequences of findings in checks, reviews, audits and investigations — Extension of findings

22.5.1 Findings in this grant

Findings in checks, reviews, audits or investigations carried out in the context of this grant may lead to the rejection of ineligible costs (see Article 42), reduction of the grant (see Article 43), recovery of undue amounts (see Article 44) or to any of the other measures described in Chapter 6.

Rejection of costs or reduction of the grant after the payment of the balance will lead to a revised final grant amount (see Article 5.4).

Findings in checks, reviews, audits or investigations may lead to a request for amendment for the modification of Annex 1 (see Article 55).

Checks, reviews, audits or investigations that find systemic or recurrent errors, irregularities, fraud or breach of obligations may also lead to consequences in other EU or Euratom grants awarded under similar conditions (**'extension of findings from this grant to other grants'**).

Moreover, findings arising from an OLAF investigation may lead to criminal prosecution under national law.

22.5.2 Findings in other grants

The Commission may extend findings from other grants to this grant (**'extension of findings from other grants to this grant'**), if:

- (a) the beneficiary concerned is found, in other EU or Euratom grants awarded under similar

carried out by the Commission in order to protect the European Communities' financial interests against fraud and other irregularities (OJ L 292, 15.11.1996, p. 2).

⁸ Regulation (EU, Euratom) No 966/2012 of the European Parliament and of the Council of 25 October 2012 on the financial rules applicable to the general budget of the Union and repealing Council Regulation (EC, Euratom) No 1605/2002 (OJ L 298, 26.10.2012, p. 1).

conditions, to have committed systemic or recurrent errors, irregularities, fraud or breach of obligations that have a material impact on this grant and

- (b) those findings are formally notified to the beneficiary concerned — together with the list of grants affected by the findings — no later than **five** years after the payment of the balance of this grant.

The extension of findings may lead to the rejection of costs (see Article 42), reduction of the grant (see Article 43), recovery of undue amounts (see Article 44), suspension of payments (see Article 48), suspension of the action implementation (see Article 49) or termination (see Article 50).

22.5.3 Procedure

The Commission will formally notify the beneficiary concerned the systemic or recurrent errors and its intention to extend these audit findings, together with the list of grants affected.

22.5.3.1 If the findings concern **eligibility of costs**: the formal notification will include:

- (a) an invitation to submit observations on the list of grants affected by the findings;
- (b) the request to submit **revised financial statements** for all grants affected;
- (c) the **correction rate for extrapolation** established by the Commission on the basis of the systemic or recurrent errors, to calculate the amounts to be rejected if the beneficiary concerned:
 - (i) considers that the submission of revised financial statements is not possible or practicable or
 - (ii) does not submit revised financial statements.

The beneficiary concerned has 90 days from receiving notification to submit observations, revised financial statements or to propose a duly substantiated **alternative correction method**. This period may be extended by the Commission in justified cases.

The amounts to be rejected will be determined on the basis of the revised financial statements, subject to their approval.

If the Commission does not receive any observations or revised financial statements, does not accept the observations or the proposed alternative correction method or does not approve the revised financial statements, it will formally notify the beneficiary concerned the application of the initially notified correction rate for extrapolation.

If the Commission accepts the alternative correction method proposed by the beneficiary concerned, it will formally notify the application of the accepted alternative correction method.

22.5.3.2 If the findings concern **improper implementation** or a **breach of another obligation**: the formal notification will include:

- (a) an invitation to submit observations on the list of grants affected by the findings and
- (b) the flat-rate the Commission intends to apply according to the principle of proportionality.

The beneficiary concerned has 90 days from receiving notification to submit observations or to propose a duly substantiated alternative flat-rate.

If the Commission does not receive any observations or does not accept the observations or the proposed alternative flat-rate, it will formally notify the beneficiary concerned the application of the initially notified flat-rate.

If the Commission accepts the alternative flat-rate proposed by the beneficiary concerned, it will formally notify the application of the accepted alternative flat-rate.

22.6 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, any insufficiently substantiated costs will be ineligible (see Article 6) and will be rejected (see Article 42).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 23 — EVALUATION OF THE IMPACT OF THE ACTION

23.1 Right to evaluate the impact of the action

The Commission may carry out interim and final evaluations of the impact of the action measured against the objective of the Research Fund for Coal and Steel programme.

Evaluations may be started during implementation of the action and up to five years after the payment of the balance. The evaluation is considered to start on the date of the formal notification to the coordinator or beneficiaries.

The Commission may make these evaluations directly (using its own staff) or indirectly (using external bodies or persons it has authorised to do so).

The coordinator or beneficiaries must provide any information relevant to evaluate the impact of the action, including information in electronic format.

23.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the Commission may apply the measures described in Chapter 6.

SECTION 3 RIGHTS AND OBLIGATIONS RELATED TO BACKGROUND AND RESULTS

SUBSECTION 1 GENERAL

ARTICLE 23a — MANAGEMENT OF INTELLECTUAL PROPERTY

23a.1 Obligation to take measures to implement the Commission Recommendation on the management of intellectual property in knowledge transfer activities

Beneficiaries that are universities or other public research organisations must take measures to implement the principles set out in Points 1 and 2 of the Code of Practice annexed to the Commission Recommendation on the management of intellectual property in knowledge transfer activities⁹.

This does not change the obligations set out in Subsections 2 and 3 of this Section.

The beneficiaries must ensure that researchers and third parties involved in the action are aware of them.

23a.2 Consequences of non-compliance

If a beneficiary breaches its obligations under this Article, the Commission may apply any of the measures described in Chapter 6.

SUBSECTION 2 RIGHTS AND OBLIGATIONS RELATED TO BACKGROUND

ARTICLE 24 — AGREEMENT ON BACKGROUND

24.1 Agreement on background

The beneficiaries must identify and agree (in writing) on the background for the action (**‘agreement on background’**).

‘Background’ means any data, know-how or information — whatever its form or nature (tangible or intangible), including any rights such as intellectual property rights — that:

- (a) is held by the beneficiaries before they acceded to the Agreement, and
- (b) is needed to implement the action or exploit the results.

24.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 25 — ACCESS RIGHTS TO BACKGROUND

25.1 Exercise of access rights — Waiving of access rights — No sub-licensing

To exercise access rights, this must first be requested in writing (**‘request for access’**).

‘Access rights’ means rights to use results or background under the terms and conditions laid down in this Agreement.

⁹ Commission Recommendation C (2008) 1329 of 10.4.2008 on the management of intellectual property in knowledge transfer activities and the Code of Practice for universities and other public research institutions attached to this recommendation.

Waivers of access rights are not valid unless in writing.

Unless agreed otherwise, access rights do not include the right to sub-license.

25.2 Access rights for other beneficiaries, for implementing their own tasks under the action

The beneficiaries must give each other access — on a royalty-free basis — to background needed to implement their own tasks under the action, unless the beneficiary that holds the background has — before acceding to the Agreement —:

- (a) informed the other beneficiaries that access to its background is subject to legal restrictions or limits, including those imposed by the rights of third parties (including personnel), or
- (b) agreed with the other beneficiaries that access would not be on a royalty-free basis.

25.3 Access rights for other beneficiaries, for exploiting their own results

The beneficiaries must give each other access — under fair and reasonable conditions — to background needed for exploiting their own results, unless the beneficiary that holds the background has — before acceding to the Agreement — informed the other beneficiaries that access to its background is subject to legal restrictions or limits, including those imposed by the rights of third parties (including personnel).

‘Fair and reasonable conditions’ means appropriate conditions, including possible financial terms or royalty-free conditions, taking into account the specific circumstances of the request for access, for example the actual or potential value of the results or background to which access is requested and/or the scope, duration or other characteristics of the exploitation envisaged.

Requests for access may be made — unless agreed otherwise — up to one year after the period set out in Article 3.

25.4 Access rights for affiliated entities

Unless otherwise agreed in the consortium agreement, access to background must also be given — under fair and reasonable conditions (see above; Article 25.3) and unless it is subject to legal restrictions or limits, including those imposed by the rights of third parties (including personnel) — to affiliated entities¹⁰ established in an EU Member State, if this is needed to exploit the results generated by the beneficiaries to which they are affiliated.

¹⁰ **‘affiliated entity’** means any legal entity that is:

- under the direct or indirect control of a participant, or
- under the same direct or indirect control as the participant, or
- directly or indirectly controlling a participant.

‘Control’ may take any of the following forms:

- (a) the direct or indirect holding of more than 50% of the nominal value of the issued share capital in the legal entity concerned, or of a majority of the voting rights of the shareholders or associates of that entity;
- (b) the direct or indirect holding, in fact or in law, of decision-making powers in the legal entity concerned.

However the following relationships between legal entities shall not in themselves be deemed to constitute controlling relationships:

- (a) the same public investment corporation, institutional investor or venture-capital company has a direct or indirect

Unless agreed otherwise (see above; Article 25.1), the affiliated entity concerned must make the request directly to the beneficiary that holds the background.

Requests for access may be made — unless agreed otherwise — up to one year after the period set out in Article 3.

25.5 Access rights for third parties

Not applicable

25.6 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

SUBSECTION 3 RIGHTS AND OBLIGATIONS RELATED TO RESULTS

ARTICLE 26 — OWNERSHIP OF RESULTS

26.1 Ownership by the beneficiary that generates the results

Results are owned by the beneficiary that generates them.

‘**Results**’ means any (tangible or intangible) output of the action such as data, knowledge or information — whatever its form or nature, whether it can be protected or not — that is generated in the action, as well as any rights attached to it, including intellectual property rights.

26.2 Joint ownership by several beneficiaries

Two or more beneficiaries own results jointly if:

- (a) they have jointly generated them and
- (b) it is not possible to:
 - (i) establish the respective contribution of each beneficiary, or
 - (ii) separate them for the purpose of applying for, obtaining or maintaining their protection (see Article 27).

The joint owners must agree (in writing) on the allocation and terms of exercise of their joint ownership (‘**joint ownership agreement**’), to ensure compliance with their obligations under this Agreement.

Unless otherwise agreed in the joint ownership agreement, each joint owner may grant non-exclusive

holding of more than 50% of the nominal value of the issued share capital or a majority of voting rights of the shareholders or associates;
(b) the legal entities concerned are owned or supervised by the same public body.

licences to third parties to exploit jointly-owned results (without any right to sub-license), if the other joint owners are given:

- (a) at least 45 days advance notice and
- (b) fair and reasonable compensation.

Once the results have been generated, joint owners may agree (in writing) to apply another regime than joint ownership (such as, for instance, transfer to a single owner (see Article 30) with access rights for the others).

26.3 Rights of third parties (including personnel)

If third parties (including personnel) may claim rights to the results, the beneficiary concerned must ensure that it complies with its obligations under the Agreement.

If a third party generates results, the beneficiary concerned must obtain all necessary rights (transfer, licences or other) from the third party, in order to be able to respect its obligations as if those results were generated by the beneficiary itself.

If obtaining the rights is impossible, the beneficiary must refrain from using the third party to generate the results.

26.4 EU ownership, to protect results

26.4.1 The EU may — with the consent of the beneficiary concerned — assume ownership of results to protect them, if a beneficiary intends — up to four years after the period set out in Article 3 — to disseminate its results without protecting them, except in any of the following cases:

- (a) the lack of protection is because protecting the results is not possible, reasonable or justified (given the circumstances);
- (b) the lack of protection is because there is a lack of potential for commercial or industrial exploitation, or
- (c) the beneficiary intends to transfer the results to another beneficiary or third party established in an EU Member State which will protect them.

Before the results are disseminated and unless any of the cases above under Points (a), (b) or (c) applies, the beneficiary must formally notify the Commission and at the same time inform it of any reasons for refusing consent. The beneficiary may refuse consent only if it can show that its legitimate interests would suffer significant harm.

If the Commission decides to assume ownership, it will formally notify the beneficiary concerned within 45 days of receiving notification.

No dissemination relating to these results may be before the end of this period or, if the Commission takes a positive decision, until it has taken the necessary steps to protect the results.

26.4.2 The EU may — with the consent of the beneficiary concerned — assume ownership of results to protect them, if a beneficiary intends — up to four years after the period set out in Article 3 — to stop protecting them or not to seek an extension of protection, except in any of the following cases:

- (a) the protection is stopped because of a lack of potential for commercial or industrial exploitation;
- (b) an extension would not be justified given the circumstances.

A beneficiary that intends to stop protecting results or not seek an extension must — unless any of the cases above under Points (a) or (b) applies — formally notify the Commission at least 60 days before the protection lapses or its extension is no longer possible and at the same time inform it of any reasons for refusing consent. The beneficiary may refuse consent only if it can show that its legitimate interests would suffer significant harm.

If the Commission decides to assume ownership, it will formally notify the beneficiary concerned within 45 days of receiving notification.

26.5 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to the any of the other measures described in Chapter 6.

ARTICLE 27 — PROTECTION OF RESULTS — VISIBILITY OF EU FUNDING

27.1 Obligation to protect the results

Each beneficiary must examine the possibility of protecting its results and must adequately protect them — for an appropriate period and with appropriate territorial coverage — if:

- (a) the results can reasonably be expected to be commercially or industrially exploited and
- (b) protecting them is possible, reasonable and justified (given the circumstances).

When deciding on protection, the beneficiary must consider its own legitimate interests and the legitimate interests (especially commercial) of the other beneficiaries.

27.2 EU ownership, to protect the results

If a beneficiary intends not to protect its results, to stop protecting them or not seek an extension of protection, the EU may — under certain conditions (see Article 26.4) — assume ownership to ensure their (continued) protection.

27.3 Information on EU funding

Applications for protection of results (including patent applications) filed by or on behalf of a beneficiary must — unless the Commission requests or agrees otherwise or unless it is impossible — include the following:

“The project leading to this application has received funding from the Research Fund for Coal and Steel under grant agreement No 847299”.

27.4 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such a breach may also lead to any of the other measures described in Chapter 6.

ARTICLE 28 — EXPLOITATION OF RESULTS

28.1 Obligation to exploit the results

Each beneficiary must — up to four years after the period set out in Article 3 — take measures aiming to ensure ‘**exploitation**’ of its results (either directly or indirectly, in particular through transfer or licensing; see Article 30) by:

- (a) using them in further research activities (outside the action);
- (b) developing, creating or marketing a product or process;
- (c) creating and providing a service, or
- (d) using them in standardisation activities.

28.2 Results that could contribute to European or international standards — Information on EU funding

If results are incorporated in a standard, the beneficiary concerned must — unless the Commission requests or agrees otherwise or unless it is impossible — ask the standardisation body to include the following statement in (information related to) the standard:

“Results incorporated in this standard received funding from the Research Fund for Coal and Steel under grant agreement No 847299 ”.

28.3 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced in accordance with Article 43.

Such a breach may also lead to any of the other measures described in Chapter 6.

ARTICLE 29 — DISSEMINATION OF RESULTS — OPEN ACCESS — VISIBILITY OF EU FUNDING

29.1 Obligation to disseminate results

Unless it goes against their legitimate interests, each beneficiary must — as soon as possible — ‘**disseminate**’ its results by disclosing them to the public by appropriate means (other than those

resulting from protecting or exploiting the results), including in scientific publications (in any medium).

This does not change the obligation to protect results in Article 27, the confidentiality obligations in Article 36, or the obligations to protect personal data in Article 39, all of which still apply.

A beneficiary that intends to disseminate its results must give advance notice to the other beneficiaries of — unless agreed otherwise — at least 45 days, together with sufficient information on the results it will disseminate.

Any other beneficiary may object within — unless agreed otherwise — 30 days of receiving notification, if it can show that its legitimate interests in relation to the results or background would be significantly harmed. In such cases, the dissemination may not take place unless appropriate steps are taken to safeguard these legitimate interests.

If a beneficiary intends not to protect its results, it may — under certain conditions (see Article 26.4.1) — need to formally notify the Commission before dissemination takes place.

29.2 Open access to scientific publications

Each beneficiary must ensure open access (free of charge online access for any user) to all peer-reviewed scientific publications relating to its results.

In particular, it must:

- (a) as soon as possible and at the latest on publication, deposit a machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication in a repository for scientific publications;

Moreover, the beneficiary must aim to deposit at the same time the research data needed to validate the results presented in the deposited scientific publications.

- (b) ensure open access to the deposited publication — via the repository — at the latest:
 - (i) on publication, if an electronic version is available for free via the publisher, or
 - (ii) within six months of publication (twelve months for publications in the social sciences and humanities) in any other case.
- (c) ensure open access — via the repository — to the bibliographic metadata that identify the deposited publication.

The bibliographic metadata must be in a standard format and must include all of the following:

- the terms the terms "*European Union (EU)*" and "*Research Fund for Coal and Steel*";
- the name of the action, acronym and grant number;
- the publication date, and length of embargo period if applicable, and
- a persistent identifier.

29.3 Open access to research data

Not applicable

29.4 Information on EU funding — Obligation and right to use the EU emblem

Unless the Commission requests or agrees otherwise or unless it is impossible, any dissemination of results (in any form, including electronic) must:

- (a) display the EU emblem and
- (b) include the following text:

“This project has received funding from the Research Fund for Coal and Steel under grant agreement No 847299”.

When displayed together with another logo, the EU emblem must have appropriate prominence.

For the purposes of their obligations under this Article, the beneficiaries may use the EU emblem without first obtaining approval from the Commission.

This does not however give them the right to exclusive use.

Moreover, they may not appropriate the EU emblem or any similar trademark or logo, either by registration or by any other means.

29.5 Disclaimer excluding Commission responsibility

Any dissemination of results must indicate that it reflects only the author's view and that the Commission is not responsible for any use that may be made of the information it contains.

29.6 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such a breach may also lead to any of the other measures described in Chapter 6.

ARTICLE 30 — TRANSFER AND LICENSING OF RESULTS

30.1 Transfer of ownership

Each beneficiary may transfer ownership of its results.

It must however ensure that its obligations under Articles 26.2, 26.4, 27, 28, 29, 30 and 31 also apply to the new owner and that this owner has the obligation to pass them on in any subsequent transfer.

Unless agreed otherwise (in writing) for specifically-identified third parties or unless impossible under applicable EU and national laws on mergers and acquisitions, a beneficiary that intends to transfer ownership of results must give at least 45 days advance notice (or less if agreed in writing) to the other beneficiaries that still have (or still may request) access rights to the results. This notification

must include sufficient information on the new owner to enable any beneficiary concerned to assess the effects on its access rights.

Unless agreed otherwise (in writing) for specifically-identified third parties, any other beneficiary may object within 30 days of receiving notification (or less if agreed in writing), if it can show that the transfer would adversely affect its access rights. In this case, the transfer may not take place until agreement has been reached between the beneficiaries concerned.

30.2 Granting licenses

Each beneficiary may grant licences to its results (or otherwise give the right to exploit them), if this does not impede the access rights under Article 31.

In addition, exclusive licences for results may be granted only if all the other beneficiaries concerned have waived their access rights (see Article 31.1).

This does not change the dissemination obligations in Article 29 which still apply.

30.3 Commission right to object to transfers or licensing

The Commission may — up to four years after the period set out in Article 3 — object to a transfer of ownership or the exclusive licensing of results, if:

- (a) it is to a third party established in a non-EU country and
- (b) the Commission considers that the transfer or licence is not in line with EU interests regarding competitiveness or is inconsistent with ethical principles or security considerations.

A beneficiary that intends to transfer ownership or grant an exclusive licence must formally notify the Commission before the intended transfer or licensing takes place and:

- identify the specific results concerned;
- describe in detail the new owner or licensee and the planned or potential exploitation of the results, and
- include a reasoned assessment of the likely impact of the transfer or licence on EU competitiveness and its consistency with ethical principles and security considerations.

The Commission may request additional information.

If the Commission decides to object to a transfer or exclusive licence, it must formally notify the beneficiary concerned within 60 days of receiving notification (or any additional information it has requested).

No transfer or licensing may take place in the following cases:

- pending the Commission decision, within the period set out above;
- if the Commission objects;

- until the conditions are complied with, if the Commission objection comes with conditions.

30.4 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such a breach may also lead to any of the other measures described in Chapter 6.

ARTICLE 31 — ACCESS RIGHTS TO RESULTS

31.1 Exercise of access rights — Waiving of access rights — No sub-licensing

The conditions set out in Article 25.1 apply.

31.2 Access rights for other beneficiaries, for implementing their own tasks under the action

The beneficiaries must give each other access — on a royalty-free basis — to results needed for implementing their own tasks under the action.

31.3 Access rights for other beneficiaries, for exploiting their own results

The beneficiaries must give each other — under fair and reasonable conditions (see Article 25.3) — access to results needed for exploiting their own results.

Requests for access may be made — unless agreed otherwise — up to one year after the period set out in Article 3.

31.4 Access rights of affiliated entities

Unless agreed otherwise in the consortium agreement, access to results must also be given — under fair and reasonable conditions (Article 25.3) — to affiliated entities established in an EU Member State, if this is needed for those entities to exploit the results generated by the beneficiaries to which they are affiliated.

Unless agreed otherwise (see above; Article 31.1), the affiliated entity concerned must make any such request directly to the beneficiary that owns the results.

Requests for access may be made — unless agreed otherwise — up to one year after the period set out in Article 3.

31.5 Access rights for the EU institutions, bodies, offices or agencies and EU Member States

The beneficiaries must give access to their results — on a royalty-free basis — to EU institutions, bodies, offices or agencies, for developing, implementing or monitoring EU policies or programmes.

Such access rights are limited to non-commercial and non-competitive use.

This does not change the right to use any material, document or information received from the beneficiaries for communication and publicising activities (see Article 38.2).

31.6 Access rights for third parties

Not applicable

31.7 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

SECTION 4 OTHER RIGHTS AND OBLIGATIONS

ARTICLE 32 — RECRUITMENT AND WORKING CONDITIONS FOR RESEARCHERS

32.1 Obligation to take measures to implement the European Charter for Researchers and Code of Conduct for the Recruitment of Researchers

The beneficiaries must take all measures to implement the principles set out in the Commission Recommendation on the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers¹¹, in particular regarding:

- working conditions;
- transparent recruitment processes based on merit, and
- career development.

The beneficiaries must ensure that researchers and third parties involved in the action are aware of them.

32.2 Consequences of non-compliance

If a beneficiary breaches its obligations under this Article, the Commission may apply any of the measures described in Chapter 6.

ARTICLE 33 — GENDER EQUALITY

33.1 Obligation to aim for gender equality

The beneficiaries must take all measures to promote equal opportunities between men and women in the implementation of the action. They must aim, to the extent possible, for a gender balance at all levels of personnel assigned to the action, including at supervisory and managerial level.

33.2 Consequences of non-compliance

¹¹ Commission Recommendation 2005/251/EC of 11 March 2005 on the European Charter for Researchers and on a Code of Conduct for the Recruitment of Researchers (OJ L 75, 22.3.2005, p. 67).

If a beneficiary breaches its obligations under this Article, the Commission may apply any of the measures described in Chapter 6.

ARTICLE 34 — ETHICS

34.1 Obligation to comply with ethical principles

The beneficiaries must carry out the action in compliance with:

- (a) ethical principles (including the highest standards of research integrity — as set out, for instance, in the European Code of Conduct for Research Integrity¹² — and including, in particular, avoiding fabrication, falsification, plagiarism or other research misconduct) and
- (b) applicable international, EU and national law.

Funding will not be granted for activities carried out outside the EU if they are prohibited in all Member States.

The beneficiaries must ensure that the activities under the action have an exclusive focus on civil applications.

The beneficiaries must ensure that the activities under the action do not:

- (a) aim at human cloning for reproductive purposes;
- (b) intend to modify the genetic heritage of human beings which could make such changes heritable (with the exception of research relating to cancer treatment of the gonads, which may be financed), or
- (c) intend to create human embryos solely for the purpose of research or for the purpose of stem cell procurement, including by means of somatic cell nuclear transfer.

34.2 Activities raising ethical issues

Activities raising ethical issues must comply with the ‘**ethics requirements**’ set out in Annex 1.

Before the beginning of an activity raising an ethical issue, the coordinator must submit (see Article 52) to the Commission copy of:

- (a) any ethics committee opinion required under national law and
- (b) any notification or authorisation for activities raising ethical issues required under national law.

If these documents are not in English, the coordinator must also submit an English summary of the submitted opinions, notifications and authorisations (containing, if available, the conclusions of the committee or authority concerned).

¹² The European Code of Conduct for Research Integrity of ALLEA (All European Academies) and ESF (European Science Foundation) of March 2011.
http://www.esf.org/fileadmin/Public_documents/Publications/Code_Conduct_ResearchIntegrity.pdf

If these documents are specifically requested for the action, the request must contain an explicit reference to the action title. The coordinator must submit a declaration by each beneficiary concerned that all the submitted documents cover the action tasks.

34.3 Activities involving human embryos or human embryonic stem cells

Not applicable

34.4 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43) and the Agreement or participation of the beneficiary may be terminated (see Article 50).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 35 — CONFLICT OF INTERESTS

35.1 Obligation to avoid a conflict of interests

The beneficiaries must take all measures to prevent any situation where the impartial and objective implementation of the action is compromised for reasons involving economic interest, political or national affinity, family or emotional ties or any other shared interest (**'conflict of interests'**).

They must formally notify to the Commission without delay any situation constituting or likely to lead to a conflict of interests and immediately take all the necessary steps to rectify this situation.

The Commission may verify that the measures taken are appropriate and may require additional measures to be taken by a specified deadline.

35.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43) and the Agreement or participation of the beneficiary may be terminated (see Article 50).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 36 — CONFIDENTIALITY

36.1 General obligation to maintain confidentiality

During implementation of the action and for four years after the period set out in Article 3, the parties must keep confidential any data, documents or other material (in any form) that is identified as confidential at the time it is disclosed (**'confidential information'**).

If a beneficiary requests, the Commission may agree to keep such information confidential for an additional period beyond the initial four years.

If information has been identified as confidential only orally, it will be considered to be confidential only if this is confirmed in writing within 15 days of the oral disclosure.

Unless otherwise agreed between the parties, they may use confidential information only to implement the Agreement.

The beneficiaries may disclose confidential information to their personnel or third parties involved in the action only if they:

- (a) need to know to implement the Agreement and
- (b) are bound by an obligation of confidentiality.

The Commission may disclose confidential information to its staff, other EU institutions and bodies or third parties, if:

- (a) this is necessary to implement the Agreement or safeguard the EU's financial interests and
- (b) the recipients of the information are bound by an obligation of confidentiality.

The confidentiality obligations no longer apply if:

- (a) the disclosing party agrees to release the other party;
- (b) the information was already known by the recipient or is given to him without obligation of confidentiality by a third party that was not bound by any obligation of confidentiality;
- (c) the recipient proves that the information was developed without the use of confidential information;
- (d) the information becomes generally and publicly available, without breaching any confidentiality obligation, or
- (e) the disclosure of the information is required by EU or national law.

36.2 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 37 — SECURITY-RELATED OBLIGATIONS

Not applicable

ARTICLE 38 — PROMOTING THE ACTION — VISIBILITY OF EU FUNDING

38.1 Communication activities by beneficiaries

38.1.1 Obligation to promote the action and its results

The beneficiaries must promote the action and its results, by providing targeted information to multiple audiences (including the media and the public) in a strategic and effective manner.

This does not change the dissemination obligations in Article 29 or the confidentiality obligations in Article 36, all of which still apply.

Before engaging in a communication activity expected to have a major media impact, the beneficiaries must inform the Commission (see Article 52).

38.1.2 Information on EU funding — Obligation and right to use the EU emblem

Unless the Commission requests or agrees otherwise or unless it is impossible, any communication activity related to the action (including in electronic form, via social media, etc.) and any infrastructure, equipment and major results funded by the grant must:

- (a) display the EU emblem and
- (b) include the following text:

For communication activities: *“This project has received funding from the Research Fund for Coal and Steel under grant agreement No 847299”*.

For infrastructure, equipment and major results: *“This [infrastructure][equipment][insert type of result] is part of a project that has received funding from the Research Fund for Coal and Steel under grant agreement No 847299”*.

When displayed together with another logo, the EU emblem must have appropriate prominence.

For the purposes of their obligations under this Article, the beneficiaries may use the EU emblem without first obtaining approval from the Commission.

This does not, however, give them the right to exclusive use.

Moreover, they may not appropriate the EU emblem or any similar trademark or logo, either by registration or by any other means.

38.1.3 Disclaimer excluding Commission responsibility

Any communication activity related to the action must indicate that it reflects only the author's view and that the Commission is not responsible for any use that may be made of the information it contains.

38.2 Communication activities by the Commission

38.2.1 Right to use beneficiaries' materials, documents or information

The Commission may use, for its communication and publicising activities, information relating to the action, documents notably summaries for publication and public deliverables as well as any other material, such as pictures or audio-visual material that it receives from any beneficiary (including in electronic form).

This does not change the confidentiality obligations in Article 36, which still apply.

However, if the Commission's use of these materials, documents or information would risk compromising legitimate interests, the beneficiary concerned may request the Commission not to use it (see Article 52).

The right to use a beneficiary's materials, documents and information includes:

- (a) **use for its own purposes** (in particular, making them available to persons working for the Commission or any other EU institution, body, office or agency or body or institutions in EU Member States; and copying or reproducing them in whole or in part, in unlimited numbers);
- (b) **distribution to the public** (in particular, publication as hard copies and in electronic or digital format, publication on the internet, as a downloadable or non-downloadable file, broadcasting by any channel, public display or presentation, communicating through press information services, or inclusion in widely accessible databases or indexes);
- (c) **editing or redrafting** for communication and publicising activities (including shortening, summarising, inserting other elements (such as meta-data, legends, other graphic, visual, audio or text elements), extracting parts (e.g. audio or video files), dividing into parts, use in a compilation);
- (d) **translation**;
- (e) giving **access in response to individual requests** under Regulation No 1049/2001¹³, without the right to reproduce or exploit;
- (f) **storage** in paper, electronic or other form;
- (g) **archiving**, in line with applicable document-management rules, and
- (h) the right to authorise **third parties** to act on its behalf or sub-license the modes of use set out in Points (b),(c),(d) and (f) to third parties if needed for the communication and publicising activities of the Commission.

If the right of use is subject to rights of a third party (including personnel of the beneficiary), the beneficiary must ensure that it complies with its obligations under this Agreement (in particular, by obtaining the necessary approval from the third parties concerned).

Where applicable (and if provided by the beneficiaries), the Commission will insert the following information:

“© – [year] – [name of the copyright owner]. All rights reserved. Licensed to the European Union (EU) under conditions.”

38.3 Consequences of non-compliance

If a beneficiary breaches any of its obligations under this Article, the grant may be reduced (see Article 43).

Such breaches may also lead to any of the other measures described in Chapter 6.

ARTICLE 39 — PROCESSING OF PERSONAL DATA

¹³ Regulation (EC) No 1049/2001 of the European Parliament and of the Council of 30 May 2001 regarding public access to European Parliament, Council and Commission documents, OJ L 145, 31.5.2001, p. 43.

39.1 Processing of personal data by the Commission

Any personal data under the Agreement will be processed by the Commission under Regulation No 45/2001¹⁴ and according to the ‘notifications of the processing operations’ to the Data Protection Officer (DPO) of the Commission (publicly accessible in the DPO register).

Such data will be processed by the ‘**data controller**’ of the Commission, for the purposes of implementing, managing and monitoring the Agreement or protecting the financial interests of the EU or Euratom (including checks, reviews, audits and investigations; see Article 22).

The persons whose personal data are processed have the right to access and correct their own personal data. For this purpose, they must send any queries about the processing of their personal data to the data controller, via the contact point indicated in the ‘privacy statement’ on the Commission websites.

They also have the right to have recourse at any time to the European Data Protection Supervisor (EDPS).

39.2 Processing of personal data by the beneficiaries

The beneficiaries must process personal data under the Agreement in compliance with applicable EU and national law on data protection (including authorisations or notification requirements).

The beneficiaries may grant their personnel access only to data that is strictly necessary for implementing, managing and monitoring the Agreement.

The beneficiaries must inform the personnel whose personal data are collected and processed by the Commission. For this purpose, they must provide them with the ‘privacy statement’ (see above), before transmitting their data to the Commission.

39.3 Consequences of non-compliance

If a beneficiary breaches any of its obligations under Article 39.2, the Commission may apply any of the measures described in Chapter 6.

ARTICLE 40 — ASSIGNMENTS OF CLAIMS FOR PAYMENT AGAINST THE COMMISSION

The beneficiaries may not assign any of their claims for payment against the Commission to any third party, except if approved by the Commission on the basis of a reasoned, written request by the coordinator (on behalf of the beneficiary concerned).

If the Commission has not accepted the assignment or the terms of it are not observed, the assignment will have no effect on it.

In no circumstances will an assignment release the beneficiaries from their obligations towards the Commission.

¹⁴ Regulation (EC) No 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data (OJ L 8, 12.01.2001, p. 1).

CHAPTER 5 DIVISION OF BENEFICIARIES' ROLES AND RESPONSIBILITIES

ARTICLE 41 — DIVISION OF BENEFICIARIES' ROLES AND RESPONSIBILITIES

41.1 Roles and responsibilities towards the Commission

The beneficiaries have full responsibility for implementing the action and complying with the Agreement.

The beneficiaries are jointly and severally liable for the **technical implementation** of the action as described in Annex 1. If a beneficiary fails to implement its part of the action, the other beneficiaries become responsible for implementing this part (without being entitled to any additional EU funding for doing so), unless the Commission expressly relieves them of this obligation.

The **financial responsibility** of each beneficiary is governed by Articles 44, 45 and 46.

41.2 Internal division of roles and responsibilities

The internal roles and responsibilities of the beneficiaries are divided as follows:

(a) Each **beneficiary** must:

- (i) keep information stored in the 'Beneficiary Register' (via the electronic exchange system) up to date (see Article 17);
- (ii) inform the coordinator immediately of any events or circumstances likely to affect significantly or delay the implementation of the action (see Article 17);
- (iii) submit to the coordinator in good time:
 - individual financial statements for itself and, if required, certificates on the financial statements (see Article 20);
 - the data needed to draw up the technical reports (see Article 20);
 - ethics committee opinions and notifications or authorisations for activities raising ethical issues (see Article 34);
 - any other documents or information required by the Commission under the Agreement, unless the Agreement requires the beneficiary to submit this information directly to the Commission;
- (iv) provide a financial guarantee if requested by the Commission (see Article 21.2);

(b) The **coordinator** must:

- (i) monitor that the action is implemented properly (see Article 7);
- (ii) act as the intermediary for all communications between the beneficiaries and the Commission (in particular, providing the Commission with the information described in Article 17), unless the Agreement specifies otherwise;

- (iii) request and review any documents or information required by the Commission and verify their completeness and correctness before passing them on to the Commission;
- (iv) submit the deliverables and reports to the Commission (see Articles 19 and 20);
- (v) ensure that all payments are made to the other beneficiaries without unjustified delay (see Article 21);
- (vi) inform the Commission of the amounts paid to each beneficiary, when required under the Agreement (see Articles 44 and 50) or requested by the Commission.

The coordinator may not delegate the above-mentioned tasks to any other beneficiary or subcontract them to any third party.

41.3 Internal arrangements between beneficiaries — Consortium agreement

Not applicable

41.4 Relationship with complementary beneficiaries — Collaboration agreement

Not applicable

41.5 Relationship with partners of a joint action — Coordination agreement

Not applicable

CHAPTER 6 REJECTION OF COSTS — REDUCTION OF THE GRANT — RECOVERY **— PENALTIES — DAMAGES — SUSPENSION — TERMINATION** **— FORCE MAJEURE**

SECTION 1 REJECTION OF COSTS — REDUCTION OF THE GRANT — RECOVERY **— PENALTIES**

ARTICLE 42 — REJECTION OF INELIGIBLE COSTS

42.1 Conditions

42.1.1 The Commission will — at the time of an **interim payment, at the payment of the balance or afterwards** — reject any costs which are ineligible (see Article 6), in particular following checks, reviews, audits or investigations (see Article 22).

42.1.2 The rejection may also be based on the **extension of findings from other grants to this grant**, under the conditions set out in Article 22.5.2.

42.2 Ineligible costs to be rejected — Calculation — Procedure

Ineligible costs will be rejected in full.

If the Commission rejects costs **without reduction of the grant** (see Article 43) or **recovery of undue amounts** (see Article 44), it will formally notify the coordinator or beneficiary concerned the rejection of costs, the amounts and the reasons why (if applicable, together with the notification of amounts due; see Article 21.5). The coordinator or beneficiary concerned may — within 30 days of receiving notification — formally notify the Commission of its disagreement and the reasons why.

If the Commission rejects costs **with reduction of the grant** or **recovery of undue amounts**, it will formally notify the rejection in the **'pre-information letter'** on reduction or recovery set out in Articles 43 and 44.

42.3 Effects

If the Commission rejects costs at the time of an **interim payment** or **the payment of the balance**, it will deduct them from the total eligible costs declared, for the action, in the periodic or final summary financial statement (see Articles 20.3 and 20.4). It will then calculate the interim payment or payment of the balance as set out in Articles 21.3 or 21.4.

If the Commission — **after an interim payment but before the payment of the balance** — rejects costs declared in a periodic summary financial statement, it will deduct them from the total eligible costs declared, for the action, in the next periodic summary financial statement or in the final summary financial statement. It will then calculate the interim payment or payment of the balance as set out in Articles 21.3 or 21.4.

If the Commission rejects costs **after the payment of the balance**, it will deduct the amount rejected from the total eligible costs declared, by the beneficiary, in the final summary financial statement. It will then calculate the revised final grant amount as set out in Article 5.4.

ARTICLE 43 — REDUCTION OF THE GRANT

43.1 Conditions

43.1.1 The Commission may — **at the payment of the balance** or **afterwards** — reduce the maximum grant amount (see Article 5.1), if the action has not been implemented properly as described in Annex 1 or another obligation under the Agreement has been breached.

43.1.2 The Commission may also reduce the maximum grant amount on the basis of the **extension of findings from other grants to this grant**, under the conditions set out in Article 22.5.2.

43.2 Amount to be reduced — Calculation — Procedure

The amount of the reduction will be proportionate to the improper implementation of the action or to the seriousness of the breach.

Before reduction of the grant, the Commission will formally notify a **'pre-information letter'** to the coordinator or beneficiary concerned:

- informing it of its intention to reduce the grant, the amount it intends to reduce and the reasons why and
- inviting it to submit observations within 30 days of receiving notification

If the Commission does not receive any observations or decides to pursue reduction despite the observations it has received, it will formally notify **confirmation** of the reduction (if applicable, together with the notification of amounts due; see Article 21).

43.3 Effects

If the Commission reduces the grant at the time of **the payment of the balance**, it will calculate the reduced grant amount for the action and then determine the amount due as payment of the balance (see Articles 5.3.4 and 21.4).

If the Commission reduces the grant **after the payment of the balance**, it will calculate the revised final grant amount for the beneficiary concerned (see Article 5.4). If the revised final grant amount for the beneficiary concerned is lower than its share of the final grant amount, the Commission will recover the difference (see Article 44).

ARTICLE 44 — RECOVERY OF UNDUE AMOUNTS

44.1 Amount to be recovered — Calculation — Procedure

The Commission will — **at the payment of the balance** or **afterwards** — claim back any amount that was paid, but is not due under the Agreement.

The beneficiaries' financial responsibility in case of recovery is limited, for each beneficiary, to its own debt.

44.1.1 Recovery after termination of a beneficiary's participation

Not applicable

44.1.2 Recovery at payment of the balance

If the payment of the balance takes the form of a recovery (see Article 21.4), the Commission will formally notify a '**pre-information letter**' to the coordinator:

- informing it of its intention to recover, the amount due as the balance and the reasons why;
- requesting the coordinator to submit a report on the distribution of payments to the beneficiaries within 30 days of receiving notification, and
- inviting the coordinator to submit observations within 30 days of receiving notification.

If no observations are submitted or the Commission decides to pursue recovery despite the observations it has received, it will **confirm recovery** (together with the notification of amounts due; see Article 21.5) and formally notify to the coordinator a debit note. This note will also specify the terms and the date for payment.

If the coordinator does not repay the Commission by the date in the debit note and has not submitted the report on the distribution of payments: the Commission will **recover** the amount set out in the debit note from the coordinator (see below).

If the coordinator does not repay the Commission by the date in the debit note, but has submitted the report on the distribution of payments: the Commission will:

- (a) identify the beneficiaries for which the amount calculated as follows is negative:

$$\left\{ \left\{ \left\{ \text{beneficiary's costs declared in the final summary financial statement and approved by the Commission multiplied by the reimbursement rate set out in Article 5.2 for the beneficiary concerned} \right\} \right\}$$
 divided by
 the EU contribution for the action calculated according to Article 5.3.1 }
 multiplied by
 the final grant amount (see Article 5.3) },
 minus
 {pre-financing and interim payments received by the beneficiary} }.

- (b) formally notify to each beneficiary identified according to point (a) a **debit note** specifying the terms and date for payment. The amount of the debit note is calculated as follows:

$$\left\{ \left\{ \text{amount calculated according to point (a) for the beneficiary concerned} \right\} \right\}$$
 divided by
 the sum of the amounts calculated according to point (a) for all the beneficiaries identified according to point (a) }
 multiplied by
 the amount set out in the debit note formally notified to the coordinator }.

If payment is not made by the date specified in the debit note, the Commission will **recover** the amount:

- (a) by '**offsetting**' it — without the beneficiary's consent — against any amounts owed to the beneficiary concerned by the Commission or an executive agency (from the EU or Euratom budget).

In exceptional circumstances, to safeguard the EU's financial interests, the Commission may offset before the payment date specified in the debit note;

- (b) not applicable;

- (c) not applicable;

- (d) by **taking legal action** (see Article 57) or by **adopting an enforceable decision** under Article 299 of the Treaty on the Functioning of the EU (TFEU) and Article 79(2) of the Financial Regulation No 966/2012.

If payment is not made by the date in the debit note, the amount to be recovered (see above) will be increased by **late-payment interest** at the rate set out in Article 21.11, from the day following the

payment date in the debit note, up to and including the date the Commission receives full payment of the amount.

Partial payments will be first credited against expenses, charges and late-payment interest and then against the principal.

Bank charges incurred in the recovery process will be borne by the beneficiary, unless Directive 2007/64/EC applies.

44.1.3 Recovery of amounts after payment of the balance

If, for a beneficiary, the revised final grant amount (see Article 5.4) is lower than its share of the final grant amount, it must repay the difference to the Commission.

The beneficiary's share of the final grant amount is calculated as follows:

$$\left\{ \left\{ \begin{array}{l} \text{beneficiary's costs declared in the final summary financial statement and approved by the Commission} \\ \text{multiplied by the reimbursement rate set out in Article 5.2 for the beneficiary concerned} \end{array} \right\} \right.$$

divided by

$$\left. \left\{ \begin{array}{l} \text{the EU contribution for the action calculated according to Article 5.3.1} \end{array} \right\} \right.$$

multiplied by

$$\left. \left\{ \begin{array}{l} \text{the final grant amount (see Article 5.3)} \end{array} \right\} \right\}.$$

If the coordinator has not distributed amounts received (see Article 21.7), the Commission will also recover these amounts.

The Commission will formally notify a **pre-information letter** to the beneficiary concerned:

- informing it of its intention to recover, the due amount and the reasons why and
- inviting it to submit observations within 30 days of receiving notification.

If no observations are submitted or the Commission decides to pursue recovery despite the observations it has received, it will **confirm** the amount to be recovered and formally notify to the beneficiary concerned a **debit note**. This note will also specify the terms and the date for payment.

If payment is not made by the date specified in the debit note, the Commission will **recover** the amount:

- (a) by '**offsetting**' it — without the beneficiary's consent — against any amounts owed to the beneficiary concerned by the Commission or an executive agency (from the EU or Euratom budget).

In exceptional circumstances, to safeguard the EU's financial interests, the Commission may offset before the payment date specified in the debit note;

- (b) not applicable;
- (c) by **taking legal action** (see Article 57) or by **adopting an enforceable decision** under

Article 299 of the Treaty on the Functioning of the EU (TFEU) and Article 79(2) of the Financial Regulation No 966/2012.

If payment is not made by the date in the debit note, the amount to be recovered (see above) will be increased by **late-payment interest** at the rate set out in Article 21.11, from the day following the date for payment in the debit note, up to and including the date the Commission receives full payment of the amount.

Partial payments will be first credited against expenses, charges and late-payment interest and then against the principal.

Bank charges incurred in the recovery process will be borne by the beneficiary, unless Directive 2007/64/EC applies.

ARTICLE 45 — ADMINISTRATIVE AND FINANCIAL PENALTIES

45.1 Conditions

Under Articles 109 and 131(4) of the Financial Regulation No 966/2012 the Commission may impose **administrative** and **financial penalties** if a beneficiary:

- (a) has committed substantial errors, irregularities or fraud or is in serious breach of its obligations under the Agreement or
- (b) has made false declarations about information required under the Agreement or for the submission of the proposal (or has not supplied such information).

Each beneficiary is responsible for paying the financial penalties imposed on it.

Under Article 109(3) of the Financial Regulation No 966/2012, the Commission may — under certain conditions and limits — publish decisions imposing administrative or financial penalties.

45.2 Duration — Amount of penalty — Calculation

Administrative penalties exclude the beneficiary from all contracts and grants financed from the EU or Euratom budget for a maximum of five years from the date the infringement is established by the Commission.

If the beneficiary commits another infringement within five years of the date the first infringement is established, the Commission may extend the exclusion period up to 10 years.

Financial penalties will be between 2% and 10% of the maximum EU contribution indicated, for the beneficiary concerned, in the estimated budget (see Annex 2).

If the beneficiary commits another infringement within five years of the date the first infringement is established, the Commission may increase the rate of financial penalties to between 4% and 20%.

45.3 Procedure

Before applying a penalty, the Commission will formally notify the beneficiary concerned:

- informing it of its intention to impose a penalty, its duration or amount and the reasons why and
- inviting it to submit observations within 30 days.

If the Commission does not receive any observations or decides to impose the penalty despite of observations it has received, it will formally notify **confirmation** of the penalty to the beneficiary concerned and — in case of financial penalties — deduct the penalty from the payment of the balance or formally notify a **debit note**, specifying the amount to be recovered, the terms and the date for payment.

If payment is not made by the date specified in the debit note, the Commission may **recover** the amount:

- (a) by '**offsetting**' it — without the beneficiary's consent — against any amounts owed to the beneficiary concerned by the Commission or an executive agency (from the EU or Euratom budget).

In exceptional circumstances, to safeguard financial interests, the Commission may offset before the payment date specified in the debit note;

- (b) by **taking legal action** (see Article 57) or by **adopting an enforceable decision** under Article 299 of the Treaty on the Functioning of the EU (TFEU) and Article 79(2) of the Financial Regulation No 966/2012.

If payment is not made by the date in the debit note, the amount to be recovered (see above) will be increased by **late-payment interest** at the rate set out in Article 21.11, from the day following the payment date in the debit note, up to and including the date the Commission receives full payment of the amount.

Partial payments will be first credited against expenses, charges and late-payment interest and then against the principal.

Bank charges incurred in the recovery process will be borne by the beneficiary, unless Directive 2007/64/EC applies.

SECTION 2 LIABILITY FOR DAMAGES

ARTICLE 46 — LIABILITY FOR DAMAGES

46.1 Liability of the Commission

The Commission cannot be held liable for any damage caused to the beneficiaries or to third parties as a consequence of implementing the Agreement, including for gross negligence.

The Commission cannot be held liable for any damage caused by any of the beneficiaries or third parties involved in the action, as a consequence of implementing the Agreement.

46.2 Liability of the beneficiaries

46.2.1 Conditions

Except in case of force majeure (see Article 51), the beneficiaries must compensate the Commission for any damage it sustains as a result of the implementation of the action or because the action was not implemented in full compliance with the Agreement.

Each beneficiary is responsible for paying the damages claimed from it.

46.2.2 Amount of damages - Calculation

The amount the Commission can claim from a beneficiary will correspond to the damage caused by that beneficiary.

46.2.3 Procedure

Before claiming damages, the Commission will formally notify the beneficiary concerned:

- informing it of its intention to claim damages, the amount and the reasons why and
- inviting it to submit observations within 30 days.

If the Commission does not receive any observations or decides to claim damages despite the observations it has received, it will formally notify **confirmation** of the claim for damages and a **debit note**, specifying the amount to be recovered, the terms and the date for payment.

If payment is not made by the date specified in the debit note, the Commission may **recover** the amount:

- (a) by '**offsetting**' it — without the beneficiary's consent — against any amounts owed to the beneficiary concerned by the Commission or an executive agency (from the EU or Euratom budget).

In exceptional circumstances, to safeguard the EU's financial interests, the Commission may offset before the payment date specified in the debit note;

- (b) by **taking legal action** (see Article 57) or by **adopting an enforceable decision** under Article 299 of the Treaty on the Functioning of the EU (TFEU) and Article 79(2) of the Financial Regulation No 966/2012.

If payment is not made by the date in the debit note, the amount to be recovered (see above) will be increased by **late-payment interest** at the rate set out in Article 21.11, from the day following the payment date in the debit note, up to and including the date the Commission receives full payment of the amount.

Partial payments will be first credited against expenses, charges and late-payment interest and then against the principal.

Bank charges incurred in the recovery process will be borne by the beneficiary, unless Directive 2007/64/EC applies.

SECTION 3 SUSPENSION AND TERMINATION

ARTICLE 47 — SUSPENSION OF PAYMENT DEADLINE

47.1 Conditions

The Commission may — at any moment — suspend the payment deadline (see Article 21.2 to 21.4) if a request for payment (see Article 20) cannot be approved because:

- (a) it does not comply with the provisions of the Agreement (see Article 20);
- (b) the technical reports or financial reports have not been submitted or are not complete or additional information is needed, or
- (c) there is doubt about the eligibility of the costs declared in the financial statements and additional checks, reviews, audits or investigations are necessary.

47.2 Procedure

The Commission will formally notify the coordinator of the suspension and the reasons why.

The suspension will **take effect** the day notification is sent by the Commission (see Article 52).

If the conditions for suspending the payment deadline are no longer met, the suspension will be **lifted** — and the remaining period will resume.

If the suspension exceeds two months, the coordinator may request the Commission if the suspension will continue.

If the payment deadline has been suspended due to the non-compliance of the technical or financial reports (see Article 20) and the revised report or statement is not submitted or was submitted but is also rejected, the Commission may also terminate the Agreement or the participation of the beneficiary (see Article 50.3.1(l)).

ARTICLE 48 — SUSPENSION OF PAYMENTS

48.1 Conditions

The Commission may — at any moment — suspend, in whole or in part, the pre-financing payment and interim payments for one or more beneficiaries or the payment of the balance for all beneficiaries, if a beneficiary:

- (a) has committed or is suspected of having committed substantial errors, irregularities, fraud or serious breach of obligations in the award procedure or under this Agreement or
- (b) has committed — in other EU or Euratom grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant (**extension of findings from other grants to this grant**; see Article 22.5.2).

48.2 Procedure

Before suspending payments, the Commission will formally notify the coordinator:

- informing it of its intention to suspend payments and the reasons why and
- inviting it to submit observations within 30 days of receiving notification.

If the Commission does not receive observations or decides to pursue the procedure despite the observations it has received, it will formally notify **confirmation** of the suspension. Otherwise, it will formally notify that the suspension procedure is not continued.

The suspension will **take effect** the day the confirmation notification is sent by the Commission.

If the conditions for resuming payments are met, the suspension will be **lifted**. The Commission will formally notify the coordinator.

During the suspension, the periodic report(s) (see Article 20.3) must not contain any individual financial statements from the beneficiary concerned. When the Commission resumes payments, the coordinator may include them in the next periodic report.

The beneficiaries may suspend implementation of the action (see Article 49.1) or terminate the Agreement or the participation of the beneficiary concerned (see Article 50.1 and 50.2).

ARTICLE 49 — SUSPENSION OF THE ACTION IMPLEMENTATION

49.1 Suspension of the action implementation, by the beneficiaries

49.1.1 Conditions

The beneficiaries may suspend implementation of the action or any part of it, if exceptional circumstances — in particular *force majeure* (see Article 51) — make implementation impossible or excessively difficult.

49.1.2 Procedure

The coordinator must immediately formally notify to the Commission the suspension (see Article 52), stating:

- the reasons why and
- the expected date of resumption.

The suspension will **take effect** the day this notification is received by the Commission.

Once circumstances allow for implementation to resume, the coordinator must immediately formally notify the Commission and request an **amendment** of the Agreement to set the date on which the action will be resumed, extend the duration of the action and make other changes necessary to adapt the action to the new situation (see Article 55) — unless the Agreement or the participation of a beneficiary has been terminated (see Article 50).

The suspension will be **lifted** with effect from the resumption date set out in the amendment. This date may be before the date on which the amendment enters into force.

Costs incurred during suspension of the action implementation are not eligible (see Article 6).

49.2 Suspension of the action implementation, by the Commission

49.2.1 Conditions

The Commission may suspend implementation of the action or any part of it:

- (a) if a beneficiary has committed or is suspected of having committed substantial errors, irregularities, fraud or serious breach of obligations in the award procedure or under this Agreement;
- (b) if a beneficiary has committed — in other EU or Euratom grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant (**extension of findings from other grants to this grant**; see Article 22.5.2), or
- (c) if the action is suspected of having lost its scientific or technological relevance.

49.2.2 Procedure

Before suspending implementation of the action, the Commission will formally notify the coordinator:

- informing it of its intention to suspend the implementation and the reasons why and
- inviting it to submit observations within 30 days of receiving notification.

If the Commission does not receive observations or decides to pursue the procedure despite the observations it has received, it will formally notify **confirmation** of the suspension. Otherwise, it will formally notify that the procedure is not continued.

The suspension will **take effect** five days after confirmation notification is received by the coordinator (or on a later date specified in the notification).

It will be **lifted** if the conditions for resuming implementation of the action are met.

The coordinator will be formally notified of the lifting and the Agreement will be **amended** to set the date on which the action will be resumed, extend the duration of the action and make other changes necessary to adapt the action to the new situation (see Article 55) — unless the Agreement has already been terminated (see Article 50).

The suspension will be lifted with effect from the resumption date set out in the amendment. This date may be before the date on which the amendment enters into force.

Costs incurred during suspension are not eligible (see Article 6).

The beneficiaries may not claim damages due to suspension by the Commission (see Article 46).

Suspension of the action implementation does not affect the Commission's right to terminate the Agreement or participation of a beneficiary (see Article 50), reduce the grant or recover amounts unduly paid (see Articles 43 and 44).

ARTICLE 50 — TERMINATION OF THE AGREEMENT OR OF THE PARTICIPATION OF ONE OR MORE BENEFICIARIES

50.1 Termination of the Agreement by the beneficiaries

50.1.1 Conditions and procedure

The beneficiaries may terminate the Agreement.

The coordinator must formally notify termination to the Commission (see Article 52), stating:

- the reasons why and
- the date the termination will take effect. This date must be after the notification.

If no reasons are given or if the Commission considers the reasons do not justify termination, the Agreement will be considered to have been '**terminated improperly**'.

The termination will **take effect** on the day specified in the notification.

50.1.2 Effects

The coordinator must — within 60 days from when termination takes effect — submit:

- (i) a periodic report (for the open reporting period until termination; see Article 20.3) and
- (ii) the final report (see Article 20.4).

If the Commission does not receive the reports within the deadline (see above), only costs which are included in an approved periodic report will be taken into account.

The Commission will **calculate** the final grant amount (see Article 5.3) and the balance (see Article 21.4) on the basis of the reports submitted. Only costs incurred until termination are eligible (see Article 6). Costs relating to contracts due for execution only after termination are not eligible.

Improper termination may lead to a reduction of the grant (see Article 43).

After termination, the beneficiaries' obligations (in particular Articles 20, 22, 23, Section 3 of Chapter 4, 36, 37, 38, 40, 42, 43 and 44) continue to apply.

50.2 Termination of the participation of one or more beneficiaries, by the beneficiaries

50.2.1 Conditions and procedure

The participation of one or more beneficiaries may be terminated by the coordinator, on request of the beneficiary concerned or on behalf of the other beneficiaries.

The coordinator must formally notify termination to the Commission (see Article 52) and inform the beneficiary concerned.

If the coordinator's participation is terminated without its agreement, the formal notification must be done by another beneficiary (acting on behalf of the other beneficiaries).

The notification must include:

- the reasons why;
- the opinion of the beneficiary concerned (or proof that this opinion has been requested in writing);
- the date the termination takes effect. This date must be after the notification, and
- a request for amendment (see Article 55), with a proposal for reallocation of the tasks and the estimated budget of the beneficiary concerned (see Annexes 1 and 2) and, if necessary, the addition of one or more new beneficiaries (see Article 56). If termination takes effect after the period set out in Article 3, no request for amendment must be included unless the beneficiary concerned is the coordinator. In this case, the request for amendment must propose a new coordinator.

If this information is not given or if the Commission considers that the reasons do not justify termination, the participation will be considered to have been **terminated improperly**.

The termination will **take effect** on the day specified in the notification.

50.2.2 Effects

The beneficiary concerned must submit to the coordinator:

- (i) a technical report and
- (ii) a financial statement covering the period from the end of the last reporting period to the date when termination takes effect.

This information must be included by the coordinator in the periodic report for the next reporting period (see Article 20.3).

If the request for amendment is rejected by the Commission, (because it calls into question the decision awarding the grant or breaches the principle of equal treatment of applicants), the Agreement may be terminated according to Article 50.3.1(c).

If the request for amendment is accepted by the Commission, the Agreement is **amended** to introduce the necessary changes (see Article 55).

Improper termination may lead to a reduction of the grant (see Article 42) or termination of the Agreement (see Article 50).

After termination, the concerned beneficiary's obligations (in particular Articles 20, 22, 23, Section 3 of Chapter 4, 36, 37, 38, 40, 42, 43 and 44) continue to apply.

50.3 Termination of the Agreement or the participation of one or more beneficiaries, by the Commission

50.3.1 Conditions

The Commission may terminate the Agreement or the participation of one or more beneficiaries, if:

- (a) one or more beneficiaries do not accede to the Agreement (see Article 56);
- (b) a change to their legal, financial, technical, organisational or ownership situation is likely to substantially affect or delay the implementation of the action or calls into question the decision to award the grant;
- (c) following termination of participation for one or more beneficiaries (see above), the necessary changes to the Agreement would call into question the decision awarding the grant or breach the principle of equal treatment of applicants (see Article 55);
- (d) implementation of the action is prevented by force majeure (see Article 51) or suspended by the coordinator (see Article 49.1) and either:
 - (i) resumption is impossible, or
 - (ii) the necessary changes to the Agreement would call into question the decision awarding the grant or breach the principle of equal treatment of applicants;
- (e) a beneficiary is declared bankrupt, being wound up, having its affairs administered by the courts, has entered into an arrangement with creditors, has suspended business activities, or is subject to any other similar proceedings or procedures under national law;
- (f) a beneficiary (or a natural person who has the power to represent or take decisions on its behalf) has been found guilty of professional misconduct, proven by any means;
- (g) a beneficiary does not comply with the applicable national law on taxes and social security;
- (h) the action has lost scientific or technological relevance;
- (i) not applicable;
- (j) not applicable;
- (k) a beneficiary (or a natural person who has the power to represent or take decisions on its behalf) has committed fraud, corruption, or is involved in a criminal organisation, money laundering or any other illegal activity affecting the EU's financial interests;
- (l) a beneficiary (or a natural person who has the power to represent or take decisions on its behalf) has — in the award procedure or under the Agreement — committed:
 - (i) substantial errors, irregularities, fraud or
 - (ii) serious breach of obligations, including improper implementation of the action,

submission of false information, failure to provide required information, breach of ethical principles;

- (m) a beneficiary has committed — in other EU or Euratom grants awarded to it under similar conditions — systemic or recurrent errors, irregularities, fraud or serious breach of obligations that have a material impact on this grant (**‘extension of findings from other grants to this grant’**).

50.3.2 Procedure

Before terminating the Agreement or participation of one or more beneficiaries, the Commission will formally notify the coordinator:

- informing it of its intention to terminate and the reasons why and
- inviting it, within 30 days of receiving notification, to submit observations and — in case of Point (l.ii) above — to inform the Commission of the measures to ensure compliance with the obligations under the Agreement.

If the Commission does not receive observations or decides to pursue the procedure despite the observations it has received, it will formally notify to the coordinator **confirmation** of the termination and the date it will take effect. Otherwise, it will formally notify that the procedure is not continued.

The termination will **take effect**:

- for terminations under Points (b), (c), (e), (g), (h), (j), and (l.ii) above: on the day specified in the notification of the confirmation (see above);
- for terminations under Points (a), (d), (f), (i), (k), (l.i) and (m) above: on the day after the notification of the confirmation is received by the coordinator.

50.3.3 Effects

- (a) for **termination of the Agreement**:

The coordinator must — within 60 days from when termination takes effect — submit:

- (i) a periodic report (for the last open reporting period until termination; see Article 20.3) and
- (ii) a final report (see Article 20.4).

If the Agreement is terminated for breach of the obligation to submit the reports (see Articles 20.8 and 50.3.1(l)), the coordinator may not submit any reports after termination.

If the Commission does not receive the reports within the deadline (see above), only costs which are included in an approved periodic report will be taken into account.

The Commission will **calculate** the final grant amount (see Article 5.3) and the balance (see Article 21.4) on the basis of the reports submitted. Only costs incurred until termination takes effect are eligible (see Article 6). Costs relating to contracts due for execution only after termination are not eligible.

This does not affect the Commission's right to reduce the grant (see Article 43) or to impose administrative and financial penalties (Article 45).

The beneficiaries may not claim damages due to termination by the Commission (see Article 46).

After termination, the beneficiaries' obligations (in particular Articles 20, 22, 23, Section 3 of Chapter 4, 36, 37, 38, 40, 42, 43 and 44) continue to apply.

(b) for **termination of the participation of one or more beneficiaries:**

The beneficiary concerned must submit to the coordinator:

- (i) a technical report and
- (ii) a financial statement covering the period from the end of the last reporting period to the date when termination takes effect.

This information must be included by the coordinator in the periodic report for the next reporting period (see Article 20.3).

If the request for amendment is rejected by the Commission (because it calls into question the decision awarding the grant or breaches the principle of equal treatment of applicants), the Agreement may be terminated according to Article 50.3.1(c).

If the request for amendment is accepted by the Commission, the Agreement is **amended** to introduce the necessary changes (see Article 50).

After termination, the concerned beneficiary's obligations (in particular Articles 20, 22, 23, Section 3 of Chapter 4, 36, 37, 38, 40, 42, 43 and 44) continue to apply.

SECTION 4 FORCE MAJEURE

ARTICLE 51 — FORCE MAJEURE

'Force majeure' means any situation or event that:

- prevents either party from fulfilling their obligations under the Agreement,
- was unforeseeable, exceptional situation and beyond the parties' control,
- was not due to error or negligence on their part (or on the part of third parties involved in the action), and
- proves to be inevitable in spite of exercising all due diligence.

The following cannot be invoked as force majeure:

- any default of a service, defect in equipment or material or delays in making them available, unless they stem directly from a relevant case of force majeure,

- labour disputes or strikes, or
- financial difficulties.

Any situation constituting force majeure must be formally notified to the other party without delay, stating the nature, likely duration and foreseeable effects.

The parties must immediately take all the necessary steps to limit any damage due to force majeure and do their best to resume implementation of the action as soon as possible.

The party prevented by force majeure from fulfilling its obligations under the Agreement cannot be considered in breach of them.

CHAPTER 7 FINAL PROVISIONS

ARTICLE 52 — COMMUNICATION BETWEEN THE PARTIES

52.1 Form and means of communication

Communication under the Agreement (information, requests, submissions, ‘formal notifications’, etc.) must:

- be made in writing and
- bear the number of the Agreement.

Until the payment of the balance: all communication must be made through the electronic exchange system and using the forms and templates provided there.

After the payment of the balance: formal notifications must be made by registered post with proof of delivery (‘formal notification on paper’).

Communications in the electronic exchange system must be made by persons authorised according to the ‘Terms and Conditions of Use of the electronic exchange system’. For naming the authorised persons, each beneficiary must have designated — before the signature of this Agreement — a ‘Legal Entity Appointed Representative (LEAR)’. The role and tasks of the LEAR are stipulated in his/her appointment letter (see Terms and Conditions of Use of the electronic exchange system).

If the electronic exchange system is temporarily unavailable, instructions will be given on the Commission website.

52.2 Date of communication

Communications are considered to have been made when they are sent by the sending party (i.e. on the date and time they are sent through the electronic exchange system).

Formal notifications through the **electronic** exchange system are considered to have been made when they are received by the receiving party (i.e. on the date and time of acceptance by the receiving party,

as indicated by the time stamp). A formal notification that has not been accepted within 10 days after sending is considered to have been accepted.

Formal notifications **on paper** sent by **registered post** with proof of delivery (only after the payment of the balance) are considered to have been made on either:

- the delivery date registered by the postal service or
- the deadline for collection at the post office.

If the electronic exchange system is temporarily unavailable, the sending party cannot be considered in breach of its obligation to send a communication within a specified deadline.

52.3 Addresses for communication

The **electronic** exchange system must be accessed via the following URL:

<https://ec.europa.eu/research/participants/portal/desktop/en/projects/>

The Commission will formally notify the coordinator and beneficiaries in advance any changes to this URL.

Formal notifications on paper (only after the payment of the balance) addressed **to the Commission** must be sent to the following address:

European Commission
Directorate-General for Research and Innovation
Coal and Steel
B-1049 Brussels Belgium

Formal notifications on paper (only after the payment of the balance) addressed **to the beneficiaries** must be sent to their legal address as specified in the 'Beneficiary Register'.

ARTICLE 53 — INTERPRETATION OF THE AGREEMENT

53.1 Precedence of the Terms and Conditions over the Annexes

The provisions in the Terms and Conditions of the Agreement take precedence over its Annexes.

Annex 2 takes precedence over Annex 1.

53.2 Privileges and immunities

Not applicable

ARTICLE 54 — CALCULATION OF PERIODS, DATES AND DEADLINES

In accordance with Regulation No 1182/71¹⁵, periods expressed in days, months or years are calculated from the moment the triggering event occurs.

The day during which that event occurs is not considered as falling within the period.

ARTICLE 55 — AMENDMENTS TO THE AGREEMENT

55.1 Conditions

The Agreement may be amended, unless the amendment entails changes to the Agreement which would call into question the decision awarding the grant or breach the principle of equal treatment of applicants.

Amendments may be requested by any of the parties.

55.2 Procedure

The party requesting an amendment must submit a request for amendment signed in the electronic exchange system (see Article 52).

The coordinator submits and receives requests for amendment on behalf of the beneficiaries (see Annex 3).

If a change of coordinator is requested without its agreement, the submission must be done by another beneficiary (acting on behalf of the other beneficiaries).

The request for amendment must include:

- the reasons why;
- the appropriate supporting documents;
- for a change of coordinator without its agreement: the opinion of the coordinator (or proof that this opinion has been requested in writing).

The Commission may request additional information.

If the party receiving the request agrees, it must sign the amendment in the electronic exchange system within 45 days of receiving notification (or any additional information the Commission has requested). If it does not agree, it must formally notify its disagreement within the same deadline. The deadline may be extended, if necessary for the assessment of the request. If no notification is received within the deadline, the request is considered to have been rejected.

An amendment **enters into force** on the day of the signature of the receiving party.

An amendment **takes effect** on the date agreed by the parties or, in the absence of such an agreement, on the date on which the amendment enters into force.

¹⁵ Regulation (EEC, Euratom) No 1182/71 of the Council of 3 June 1971 determining the rules applicable to periods, dates and time-limits (OJ L 124, 8.6.1971, p. 1).

ARTICLE 56 — ACCESSION TO THE AGREEMENT

56.1 Accession of the beneficiaries mentioned in the Preamble

The other beneficiaries must accede to the Agreement by signing the Accession Form (see Annex 3) in the electronic exchange system (see Article 52), within 30 days after its entry into force (see Article 58).

They will assume the rights and obligations under the Agreement with effect from the date of its entry into force (see Article 58).

If a beneficiary does not accede to the Agreement within the above deadline, the coordinator must — within 30 days — request an amendment to make any changes necessary to ensure proper implementation of the action. This does not affect the Commission's right to terminate the Agreement (see Article 50).

56.2 Addition of new beneficiaries

In justified cases, the beneficiaries may request the addition of a new beneficiary.

For this purpose, the coordinator must submit a request for amendment in accordance with Article 55. It must include an Accession Form (see Annex 3) signed by the new beneficiary in the electronic exchange system (see Article 52).

New beneficiaries must assume the rights and obligations under the Agreement with effect from the date of their accession specified in the Accession Form (see Annex 3).

ARTICLE 57 — APPLICABLE LAW AND SETTLEMENT OF DISPUTES

57.1 Applicable law

The Agreement is governed by the applicable EU law, supplemented if necessary by the law of Belgium.

57.2 Dispute settlement

If a dispute concerning the interpretation, application or validity of the Agreement cannot be settled amicably, the General Court — or, on appeal, the Court of Justice of the European Union — has sole jurisdiction. Such actions must be brought under Article 272 of the Treaty on the Functioning of the EU (TFEU).

If a dispute concerns administrative or financial penalties, offsetting or an enforceable decision under Article 299 TFEU (see Articles 44, 45 and 46), the beneficiaries must bring action before the General Court — or, on appeal, the Court of Justice of the European Union — under Article 263 TFEU.

ARTICLE 58 — ENTRY INTO FORCE OF THE AGREEMENT

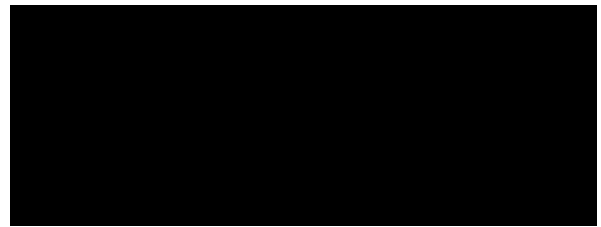
The Agreement will enter into force on the day of signature by the Commission or the coordinator, depending on which is later.

SIGNATURES

For the coordinator



For the Commission





EUROPEAN COMMISSION
Directorate-General for Research and Innovation
Coal and Steel

ANNEX 1 (part A)

Research project

NUMBER — 847299 — RAFF

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1.1. The project summary

Project Number ¹	847299	Project Acronym ²	RAFF
One form per project			
General information			
Project title ³	RISK ASSESSMENT OF FINAL PITS DURING FLOODING		
Starting date ⁴	The first day of the month after the signature by the Commission		
Duration in months ⁵	36		
Call (part) identifier ⁶	RFCS-2018		
Topic	RFCS-01-2018 Coal		
Fixed EC Keywords			
Free keywords	opencast mining, flooding, risk assessment, geotechnics, hydrogeology, pit lakes		
Abstract ⁷			
<p>The RAFF project aims to research issues related to pit lakes, which is one of the most common uses of post exploitation voids. Up to now, in Europe, there is no precedent for the creation of a pit lake of a brown coal open pit mine of the volume c.a. 1,5 billion cubic meters. There are many examples of flooded smaller final pits and in some of these, during the process of filling with water, serious geotechnical problems have been encountered. It is expected that during reclamation of open pits of volume 1,5 billion m³ the scale of geotechnical problems will be significant and may impede the process of filling the voids with water.</p> <p>Almost all such artificial lakes are currently (and in the future) dedicated to recreational purposes. To ensure safe utilization of these localities by the public, it is necessary to assess the risk of instability of these areas, and evaluate the long-term monitoring. The main objectives for monitoring the abandoned open-pit mines are: geotechnical stability of the close vicinity and especially the slopes (both under the water level and the final slopes around the lake); the quality of water (chemical composition), not only in the lake itself but also in the close vicinity and all water feeding into the lake.</p> <p>The main aims of the project are connected with the creation of comprehensive models that can be used for risk assessment purposes. Innovative outcomes of the project will contribute to methodologies and guidelines to improve the safety, security, and environment aspects of flooded open pit mines. The project will carry out in-situ investigation, laboratory tests, and numerical and physical modelling to achieve the objectives.</p> <p>Thirteen deliverables are planned to be developed within the RAFF project, especially methodologies, numerical models and guidelines.</p>			

1.2. List of Beneficiaries

Project Number ¹	847299	Project Acronym ²	RAFF
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List of Beneficiaries

No	Name	Short name	Country	Project entry month ⁸	Project exit month
1	POLTEGOR INSTYTUT INSTYTUT GORNICTWA ODKRYWKOWEGO-POLTEGOR INSTITUTE INSTITUTE OF OPENCAST MINING	Poltegor	Poland	1	36
2	VYZKUMNY USTAV PRO HNEDE UHLI AS	VUHU MOST	Czech Republic	1	36
3	POLYTECHNEIO KRITIS	TUC	Greece	1	36
4	INSTITUT NATIONAL DE L ENVIRONNEMENT ET DES RISQUES INERIS	INERIS	France	1	36
5	ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS	CERTH	Greece	1	36
6	THE UNIVERSITY OF NOTTINGHAM	UoN	United Kingdom	1	36
7	GLOWNY INSTYTUT GORNICTWA	GIG	Poland	1	36
8	UNIVERSITATEA DIN PETROSANI	FME-UP	Romania	1	36
9	PALIVOVY KOMBINAT USTI STATNI PODNIK	PKU	Czech Republic	1	36
10	CTL MACZKI-BOR SPOLKA AKCYJNA	CTL	Poland	1	36
11	SUBTERRA INGENIERIA SL	SUBTERRA	Spain	1	36
12	SOCIETATEA COMPLEXUL ENERGETIC OLTENIA SA	OLTENIA	Romania	1	36

1.3. Workplan Tables - Details of implementation Associated with document Ref. Arcs(2019)3044485 - 07/05/2019

1.3.1. WT1 List of work packages

WP Number ⁹	WP Title	Lead beneficiary ¹⁰	Person-months ¹¹	Start month ¹²	End month ¹³
WP1	Identification of problems and threats in the final pits	2 - VUHU MOST	124.08	1	15
WP2	Geotechnical characterisation and modelling of reservoir slopes	6 - UoN	194.07	1	33
WP3	Development of methodology and tools for assessment of hydrodynamical and hydrochemical conditions changes in open pit mines and their surroundings	1 - Poltegor	97.37	1	33
WP4	Development of comprehensive models of final pits and risks assessment.	4 - INERIS	86.14	16	36
WP5	Coordination and management of the project	1 - Poltegor	54.17	1	36
Total			555.83		

1.3.2. WT2 list of deliverables

Deliverable Number ¹⁴	Deliverable Title	WP number ⁹	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D1.1	Report on archive designs	WP1	2 - VUHU MOST	Report	Public	9
D1.2	Report on in situ surveys of artificial reservoirs	WP1	1 - Poltegor	Report	Public	12
D1.3	Identification of crucial factors influencing on flooding process	WP1	11 - SUBTERRA	Report	Public	15
D2.1	Guidelines regarding the appropriate testing that should be conducted on materials that may affect the stability of reservoir slopes	WP2	2 - VUHU MOST	Report	Public	18
D2.2	Results of laboratory and in-situ testing of materials used in construction of final reservoir slopes	WP2	6 - UoN	Other	Confidential, only for members of the consortium (including the Commission Services)	24
D2.3	Preliminary results of physical modelling of reservoir slopes	WP2	6 - UoN	Other	Confidential, only for members of the consortium (including the Commission Services)	33
D2.4	Final results of physical modelling of reservoir slopes	WP2	6 - UoN	Other	Public	33
D2.5	Preliminary results of numerical modelling of reservoir slopes	WP2	3 - TUC	Other	Confidential, only for members of the consortium (including the Commission Services)	33
D2.6	Final results of numerical modelling of reservoir slopes	WP2	3 - TUC	Other	Public	33
D3.1	Report on evaluation of hydrogeological conditions in test sites	WP3	1 - Poltegor	Report	Public	18
D3.2	Guidelines for groundwater pollution vulnerability assessment	WP3	7 - GIG	Other	Public	27

Deliverable Number¹⁴	Deliverable Title	WP number⁹	Lead beneficiary	Type¹⁵	Dissemination level¹⁶	Due Date (in months)¹⁷
D3.3	Numerical models of hydrogeological conditions	WP3	1 - Poltegor	Other	Confidential, only for members of the consortium (including the Commission Services)	33
D4.1	Development of a reliability methodology for assessing the long-term stability of flooded open pit mine	WP4	4 - INERIS	Other	Public	36
D4.2	Comprehensive risk assessment of flooded open pit mines	WP4	5 - CERTH	Report	Public	36
D4.3	Operational guidelines for risk assessment of final pits during flooding	WP4	4 - INERIS	Other	Public	36
D5.1	Reports	WP5	1 - Poltegor	Report	Confidential, only for members of the consortium (including the Commission Services)	36
D5.2	Web site presenting project results and implementation	WP5	1 - Poltegor	Websites, patents filling, etc.	Public	36
D5.3	Monograph from final conference presenting project achievements	WP5	1 - Poltegor	Other	Public	36

1.3.3. WT3 Work package descriptions

Work package number ⁹	WP1	Lead beneficiary ¹⁰	2 - VUHU MOST
Work package title	Identification of problems and threats in the final pits		
Start month	1	End month	15

Objectives

- Analyse archival data and previous designs regarding previously flooded pits.
- Identify crucial geological factors which can influence the flooding process.
- Conduct in-situ surveys of the base and slopes of flooded artificial reservoirs.
- Compare archival designs to current situations (including issues during flooding) in artificial lakes.

Description of work and role of partners

WP1 - Identification of problems and threats in the final pits [Months: 1-15]

VUHU MOST, Poltegor, TUC, INERIS, GIG, FME-UP, PKU, CTL, SUBTERRA, OLTENIA

In this WP, previously flooded open pits will be chosen for gathering information about crucial factors that influence the stability of slopes during the flooding process. Knowledge obtained by comparing the original design and the actual state of final reservoirs will enable the minimization of risks in future flooding of open pits. Planned multiple test site investigations will contribute to better generalization of obtained results, which will be valuable for the next stages of the project.

This work package is split into three tasks which focus on:

1. Analysis of archival data and previous designs (VUHU, POLT, TUC, GIG, UP, PKU, CTL, CEO)
2. Survey of bottom and slopes of flooded artificial reservoirs (POLT, VUHU, PKU, INERIS)
3. Identification of critical factors which influence flooded open pits (POLT, VUHU, TUC, SUB, GIG, CTL, UP, CEO)

Participation per Partner

Partner number and short name	WP1 effort
1 - Poltegor	21.30
2 - VUHU MOST	24.00
3 - TUC	12.80
4 - INERIS	5.40
7 - GIG	7.94
8 - FME-UP	8.00
9 - PKU	15.40
10 - CTL	6.24
11 - SUBTERRA	8.50
12 - OLTENIA	14.50
Total	124.08

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D1.1	Report on archive designs	2 - VUHU MOST	Report	Public	9
D1.2	Report on in situ surveys of artificial reservoirs	1 - Poltegor	Report	Public	12
D1.3	Identification of crucial factors influencing on flooding process	11 - SUBTERRA	Report	Public	15

Description of deliverables

D1.1.1 Report on archive designs – Q3 – partner responsible: VUHU
 D1.2.1. Report on in situ surveys of artificial reservoirs - Q4 – partner responsible: POLT
 D1.3.1 Identification of crucial factors influencing on flooding process – Q5 – partner responsible: SUB

D1.1 : Report on archive designs [9]
 D1.1.1 Report on archive designs – Q3 – partner responsible: VUHU

D1.2 : Report on in situ surveys of artificial reservoirs [12]
 D1.2.1. Report on in situ surveys of artificial reservoirs - Q4 – partner responsible: POLT

D1.3 : Identification of crucial factors influencing on flooding process [15]
 D1.3.1 Identification of crucial factors influencing on flooding process – Q5 – partner responsible: SUB

Schedule of relevant Milestones

Milestone number ¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS2	Collection and analysis of historical data	2 - VUHU MOST	9	The data collected and works done will be focused on analysis of the original morphology as well as analysis of hydrology, hydrogeology, geology, pedology of original area. They will also include foundations of the inner dump areas and description of materials deposited in the inner dump areas as well as geotechnical problems faced during construction and their resolution

Work package number ⁹	WP2	Lead beneficiary ¹⁰	6 - UoN
Work package title	Geotechnical characterisation and modelling of reservoir slopes		
Start month	1	End month	33

Objectives

The WP is achieved through the following tasks:

- Evaluation of geological/geotechnical data relating to stability issues arising during reservoir flooding.
- Laboratory and in-situ tests of materials used in construction of final slopes, including effect of dumping methods and influence of time on material properties.
- Geotechnical centrifuge modelling of reservoir slopes
- Numerical modelling of reservoir slopes.
- Numerical modelling of inner dumps and backfill material.

Description of work and role of partners

WP2 - Geotechnical characterisation and modelling of reservoir slopes [Months: 1-33]
 UoN, Poltegor , VUHU MOST, TUC, INERIS, CERTH, GIG, FME-UP, PKU, CTL , SUBTERRA, OLTENIA
 This Work Package consists of four tasks.

1. Evaluation of geological/geotechnical data relating to stability issues arising during reservoir flooding (POLT, VUHU, UoN, UP, SUB, GIG, CTL)
2. Laboratory and in-situ tests of materials used in construction of final slopes, including effect of dumping methods and influence of time on material properties. (POLT, VUHU, TUC, UoN, GIG, PKU, CTL, CEO)
3. Geotechnical centrifuge modelling of reservoir slopes (UoN, POLT, VUHU, GIG)
4. Numerical modelling of reservoir slopes (TUC, POLT, VUHU, CERTH, UoN, SUB, INERIS)

Participation per Partner

Partner number and short name	WP2 effort
1 - Poltegor	17.50
2 - VUHU MOST	17.50
3 - TUC	34.00
4 - INERIS	7.70
5 - CERTH	16.80
6 - UoN	55.20
7 - GIG	11.25
8 - FME-UP	7.00
9 - PKU	3.50
10 - CTL	4.92
11 - SUBTERRA	15.20
12 - OLTENIA	3.50
Total	194.07

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D2.1	Guidelines regarding the appropriate testing that should be conducted on materials that may affect the stability of reservoir slopes	2 - VUHU MOST	Report	Public	18
D2.2	Results of laboratory and in-situ testing of materials used in construction of final reservoir slopes	6 - UoN	Other	Confidential, only for members of the consortium (including the Commission Services)	24
D2.3	Preliminary results of physical modelling of reservoir slopes	6 - UoN	Other	Confidential, only for members of the consortium (including the Commission Services)	33
D2.4	Final results of physical modelling of reservoir slopes	6 - UoN	Other	Public	33
D2.5	Preliminary results of numerical modelling of reservoir slopes	3 - TUC	Other	Confidential, only for members of the consortium (including the Commission Services)	33
D2.6	Final results of numerical modelling of reservoir slopes	3 - TUC	Other	Public	33

Description of deliverables

D2.1.1 Guidelines regarding the appropriate testing that should be conducted on materials that may affect the stability of reservoir slopes. – Q6 – partner responsible: VUHU
D2.2.1 Results of laboratory and in-situ testing of materials used in construction of final reservoir slopes – Q8 – partner responsible UoN
D2.3.1 Preliminary results of physical modelling of reservoir slopes – Q8 – partner responsible: UoN
D2.3.2 Final results of physical modelling of reservoir slopes – Q11 – partner responsible: UoN
D2.4.1 Preliminary results of numerical modelling of reservoir slopes – Q9 – partner responsible - TUC
D2.4.2 Final results of numerical modelling of reservoir slopes – Q11 – partner responsible - TUC
D2.1 : Guidelines regarding the appropriate testing that should be conducted on materials that may affect the stability of reservoir slopes [18]
D2.1.1 Guidelines regarding the appropriate testing that should be conducted on materials that may affect the stability of reservoir slopes. – Q6 – partner responsible: VUHU
D2.2 : Results of laboratory and in-situ testing of materials used in construction of final reservoir slopes [24]
D2.2.1 Results of laboratory and in-situ testing of materials used in construction of final reservoir slopes – Q8 – partner responsible UoN
D2.3 : Preliminary results of physical modelling of reservoir slopes [33]
D2.3.1 Preliminary results of physical modelling of reservoir slopes – Q8 – partner responsible: UoN

D2.4 : Final results of physical modelling of reservoir slopes [33]
 D2.3.2 Final results of physical modelling of reservoir slopes – Q11 – partner responsible: UoN
 D2.5 : Preliminary results of numerical modelling of reservoir slopes [33]
 D2.4.1 Preliminary results of numerical modelling of reservoir slopes – Q9 – partner responsible - TUC
 D2.6 : Final results of numerical modelling of reservoir slopes [33]
 D2.4.2 Final results of numerical modelling of reservoir slopes – Q11 – partner responsible - TUC

Schedule of relevant Milestones

Milestone number¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS3	Design of the test programme	6 - UoN	21	The works realized will include development of a test programme and identification of model materials and geometries

Work package number ⁹	WP3	Lead beneficiary ¹⁰	1 - Poltegor
Work package title	Development of methodology and tools for assessment of hydrodynamical and hydrochemical conditions changes in open pit mines and their surroundings		
Start month	1	End month	33

Objectives

This WP aims to provide detailed understanding water condition changes and their influence on water quality in the pit.

Description of work and role of partners

WP3 - Development of methodology and tools for assessment of hydrodynamical and hydrochemical conditions changes in open pit mines and their surroundings [Months: 1-33]

Poltegor , VUHU MOST, TUC, GIG, FME-UP, PKU, CTL , OLTENIA

This work Package consists of three tasks.

1. Evaluation of open pit hydrogeological conditions. (POLT, VUHU, GIG, UP, CTL, CEO, PKU)
2. Methodology for the assessment of groundwater pollution vulnerability (GIG, POLT, PKU, CTL)
3. Numerical modelling of hydrogeological conditions (POLT, VUHU, GIG, TUC, PKU, CTL)

Participation per Partner

Partner number and short name	WP3 effort
1 - Poltegor	29.00
2 - VUHU MOST	15.30
3 - TUC	11.50
7 - GIG	26.48
8 - FME-UP	7.80
9 - PKU	2.10
10 - CTL	2.09
12 - OLTENIA	3.10
Total	97.37

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D3.1	Report on evaluation of hydrogeological conditions in test sites	1 - Poltegor	Report	Public	18
D3.2	Guidelines for groundwater pollution vulnerability assessment	7 - GIG	Other	Public	27

List of deliverables

Deliverable Number¹⁴	Deliverable Title	Lead beneficiary	Type¹⁵	Dissemination level¹⁶	Due Date (in months)¹⁷
D3.3	Numerical models of hydrogeological conditions	1 - Poltegor	Other	Confidential, only for members of the consortium (including the Commission Services)	33

Description of deliverables

D3.1.1 Report on evaluation of hydrogeological conditions in test sites. – Q6 – partner responsible: POLT
 D3.2.1 Guidelines for groundwater pollution vulnerability assessment. – Q9 – partner responsible: GIG
 D3.3.1 Numerical models of hydrogeological conditions – Q11 – partner responsible: POLT

D3.1 : Report on evaluation of hydrogeological conditions in test sites [18]
 D3.1.1 Report on evaluation of hydrogeological conditions in test sites. – Q6 – partner responsible: POLT

D3.2 : Guidelines for groundwater pollution vulnerability assessment [27]
 D3.2.1 Guidelines for groundwater pollution vulnerability assessment. – Q9 – partner responsible: GIG

D3.3 : Numerical models of hydrogeological conditions [33]
 D3.3.1 Numerical models of hydrogeological conditions – Q11 – partner responsible: POLT

Schedule of relevant Milestones

Milestone number¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS1	Identification of factors determining groundwater flow and changes in water quality	1 - Poltegor	18	The works will be focused among others on identification of contaminants within the test sites.

Work package number ⁹	WP4	Lead beneficiary ¹⁰	4 - INERIS
Work package title	Development of comprehensive models of final pits and risks assessment.		
Start month	16	End month	36

Objectives

The objective of this WP is the elaboration of an assessment methodology of risks which may affect flooded open pit mines. This will be done through the following tasks:

- Development of a reliability methodology for assessing the long-term stability of flooded open pit mines
- Elaboration of a comprehensive risk assessment methodology of flooded open pit mines
- Elaboration of guidelines for risks assessment during and after flooding of final pit

Description of work and role of partners

WP4 - Development of comprehensive models of final pits and risks assessment. [Months: 16-36]

INERIS, Poltegor, VUHU MOST, TUC, CERTH, GIG, PKU, CTL, SUBTERRA, OLTENIA

This Work Package consists of three tasks:

1. Development of a reliability methodology for assessing the long-term stability of flooded open pit mines (INERIS, CERTH)
2. Elaboration of a comprehensive risk assessment methodology of flooded open pit mines (CERTH, POLT, VUHU, TUC, INERIS, SUB, GIG)
3. Elaboration of guidelines for risks assessment during flooding of final pit (INERIS, POLT, VUHU, CERTH, SUB, GIG, CTL, CEO, PKU)

Participation per Partner

Partner number and short name	WP4 effort
1 - Poltegor	12.20
2 - VUHU MOST	14.00
3 - TUC	11.50
4 - INERIS	10.40
5 - CERTH	28.30
7 - GIG	2.96
9 - PKU	0.70
10 - CTL	1.12
11 - SUBTERRA	4.26
12 - OLTENIA	0.70
Total	86.14

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D4.1	Development of a reliability methodology	4 - INERIS	Other	Public	36

List of deliverables

Deliverable Number¹⁴	Deliverable Title	Lead beneficiary	Type¹⁵	Dissemination level¹⁶	Due Date (in months)¹⁷
	for assessing the long-term stability of flooded open pit mine				
D4.2	Comprehensive risk assessment of flooded open pit mines	5 - CERTH	Report	Public	36
D4.3	Operational guidelines for risk assessment of final pits during flooding	4 - INERIS	Other	Public	36

Description of deliverables

D4.1.1 Development of a reliability methodology for assessing the long-term stability of flooded open pit mine – Q12 - partner responsible: INERIS
 D4.2.1 Comprehensive risk assessment of flooded open pit mines – Q12 – partner responsible: CERTH
 D4.3.1 Operational guidelines for risk assessment of final pits during flooding – Q12 – partner responsible: INERIS
 D4.1 : Development of a reliability methodology for assessing the long-term stability of flooded open pit mine [36]
 D4.1.1 Development of a reliability methodology for assessing the long-term stability of flooded open pit mine – Q12 - partner responsible: INERIS
 D4.2 : Comprehensive risk assessment of flooded open pit mines [36]
 D4.2.1 Comprehensive risk assessment of flooded open pit mines – Q12 – partner responsible: CERTH
 D4.3 : Operational guidelines for risk assessment of final pits during flooding [36]
 D4.3.1 Operational guidelines for risk assessment of final pits during flooding – Q12 – partner responsible: INERIS

Schedule of relevant Milestones

Milestone number¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
MS4	Determination of geometrical and geotechnical parameters	4 - INERIS	30	The works will be focused on determination of geometrical and geotechnical parameters' influence in reservoir pit slopes stability by carrying out a set of parametric numerical models using the distribution laws of the critical geometrical and geotechnical parameters.

Work package number ⁹	WP5	Lead beneficiary ¹⁰	1 - Poltegor
Work package title	Coordination and management of the project		
Start month	1	End month	36

Objectives

The specific objectives are:

- coordination of cooperation between project partners and communication between them
- dissemination of project results during project realization and after project termination

Description of work and role of partners

WP5 - Coordination and management of the project [Months: 1-36]

Poltegor, VUHU MOST, TUC, INERIS, CERTH, UoN, GIG, FME-UP, PKU, CTL, SUBTERRA, OLTENIA

The coordination activities are divided into the two tasks:

1. Project coordination
2. Project promotion and dissemination (All)

Participation per Partner

Partner number and short name	WP5 effort
1 - Poltegor	8.75
2 - VUHU MOST	4.20
3 - TUC	4.20
4 - INERIS	4.20
5 - CERTH	4.20
6 - UoN	4.20
7 - GIG	3.99
8 - FME-UP	4.20
9 - PKU	4.20
10 - CTL	3.63
11 - SUBTERRA	4.20
12 - OLTENIA	4.20
Total	54.17

List of deliverables

Deliverable Number ¹⁴	Deliverable Title	Lead beneficiary	Type ¹⁵	Dissemination level ¹⁶	Due Date (in months) ¹⁷
D5.1	Reports	1 - Poltegor	Report	Confidential, only for members of the consortium (including	36

List of deliverables

Deliverable Number¹⁴	Deliverable Title	Lead beneficiary	Type¹⁵	Dissemination level¹⁶	Due Date (in months)¹⁷
				the Commission Services)	
D5.2	Web site presenting project results and implementation	1 - Poltegor	Websites, patents filling, etc.	Public	36
D5.3	Monograph from final conference presenting project achievements	1 - Poltegor	Other	Public	36

Description of deliverables

D51.1 Reports (POLT and all).
 D5.2.1 Web site presenting project results and implementation. (POLT and all)
 D5.2.2 Monograph from final conference presenting project achievements. (All)
 D5.1 : Reports [36]
 D01.1 Reports (POLT and all)
 D5.2 : Web site presenting project results and implementation [36]
 D0.2.1 Web site presenting project results and implementation. (POLT and all)
 D5.3 : Monograph from final conference presenting project achievements [36]
 D0.2.2 Monograph from final conference presenting project achievements. (All)

Schedule of relevant Milestones

Milestone number¹⁸	Milestone title	Lead beneficiary	Due Date (in months)	Means of verification
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1.3.4. WT4 List of milestones

Milestone number ¹⁸	Milestone title	WP number ⁹	Lead beneficiary	Due Date (in months) ¹⁷	Means of verification
MS1	Identification of factors determining groundwater flow and changes in water quality	WP3	1 - Poltegor	18	The works will be focused among others on identification of contaminants within the test sites.
MS2	Collection and analysis of historical data	WP1	2 - VUHU MOST	9	The data collected and works done will be focused on analysis of the original morphology as well as analysis of hydrology, hydrogeology, geology, pedology of original area. They will also include foundations of the inner dump areas and description of materials deposited in the inner dump areas as well as geotechnical problems faced during construction and their resolution
MS3	Design of the test programme	WP2	6 - UoN	21	The works realized will include development of a test programme and identification of model materials and geometries
MS4	Determination of geometrical and geotechnical parameters	WP4	4 - INERIS	30	The works will be focused on determination of geometrical and geotechnical parameters' influence in reservoir pit slopes stability by carrying out a set of parametric numerical models using the distribution laws of the critical geometrical and geotechnical parameters.

1.3.5. WT5 Critical Implementation risks and mitigation actions

Risk number	Description of risk	WP Number	Proposed risk-mitigation measures
1	Staff issues causing delays in meeting milestone deadlines.	WP1, WP2, WP3, WP4, WP5	All partners are large institutions are the work is not reliant on a single person.
2	Issue with the proposed schedule	WP1, WP2, WP3, WP4, WP5	Mitigating steps which can be undertaken the minimise the impact on subsequent tasks with participation of the project officer.
3	Difficulties with subcontractor	WP2	The arrangements with potential subcontractors will be started from the very beginning of the project although their works are planned from the 6th month of project realization.

1.3.6. WT6 Summary of project effort in person-months

	WP1	WP2	WP3	WP4	WP5	Total Person/Months per Participant
1 - Poltegor	21.30	17.50	29	12.20	8.75	88.75
2 - VUHU MOST	24	17.50	15.30	14	4.20	75
3 - TUC	12.80	34	11.50	11.50	4.20	74
4 - INERIS	5.40	7.70	0	10.40	4.20	27.70
5 - CERTH	0	16.80	0	28.30	4.20	49.30
6 - UoN	0	55.20	0	0	4.20	59.40
7 - GIG	7.94	11.25	26.48	2.96	3.99	52.62
8 - FME-UP	8	7	7.80	0	4.20	27
9 - PKU	15.40	3.50	2.10	0.70	4.20	25.90
10 - CTL	6.24	4.92	2.09	1.12	3.63	18
11 - SUBTERRA	8.50	15.20	0	4.26	4.20	32.16
12 - OLTENIA	14.50	3.50	3.10	0.70	4.20	26
Total Person/Months	124.08	194.07	97.37	86.14	54.17	555.83

1.3.7. WT7 Tentative schedule of project reviews

No project reviews indicated

1. Project number

The project number has been assigned by the Commission as the unique identifier for your project. It cannot be changed. The project number **should appear on each page of the grant agreement preparation documents (part A and part B)** to prevent errors during its handling.

2. Project acronym

Use the project acronym as given in the submitted proposal. It can generally not be changed. The same acronym **should appear on each page of the grant agreement preparation documents (part A and part B)** to prevent errors during its handling.

3. Project title

Use the title (preferably no longer than 200 characters) as indicated in the submitted proposal. Minor corrections are possible if agreed during the preparation of the grant agreement.

4. Starting date

Unless a specific (fixed) starting date is duly justified and agreed upon during the preparation of the Grant Agreement, the project will start on the first day of the month following the entry into force of the Grant Agreement (NB : entry into force = signature by the Commission). Please note that if a fixed starting date is used, you will be required to provide a written justification.

5. Duration

Insert the duration of the project in full months.

6. Call (part) identifier

The Call (part) identifier is the reference number given in the call or part of the call you were addressing, as indicated in the publication of the call in the Official Journal of the European Union. You have to use the identifier given by the Commission in the letter inviting to prepare the grant agreement.

7. Abstract

8. Project Entry Month

The month at which the participant joined the consortium, month 1 marking the start date of the project, and all other start dates being relative to this start date.

9. Work Package number

Work package number: WP1, WP2, WP3, ..., WPn

10. Lead beneficiary

This must be one of the beneficiaries in the grant (not a third party) - Number of the beneficiary leading the work in this work package

11. Person-months per work package

The total number of person-months allocated to each work package.

12. Start month

Relative start date for the work in the specific work packages, month 1 marking the start date of the project, and all other start dates being relative to this start date.

13. End month

Relative end date, month 1 marking the start date of the project, and all end dates being relative to this start date.

14. Deliverable number

Deliverable numbers: D1 - Dn

15. Type

Please indicate the type of the deliverable using one of the following codes:

R	Document, report
DEM	Demonstrator, pilot, prototype
DEC	Websites, patent filings, videos, etc.
OTHER	
ETHICS	Ethics requirement
ORDP	Open Research Data Pilot
DATA	data sets, microdata, etc.

16. Dissemination level

Please indicate the dissemination level using one of the following codes:

- PU Public
- CO Confidential, only for members of the consortium (including the Commission Services)
- EU-RES Classified Information: RESTREINT UE (Commission Decision 2005/444/EC)
- EU-CON Classified Information: CONFIDENTIEL UE (Commission Decision 2005/444/EC)
- EU-SEC Classified Information: SECRET UE (Commission Decision 2005/444/EC)

17. Delivery date for Deliverable

Month in which the deliverables will be available, month 1 marking the start date of the project, and all delivery dates being relative to this start date.

18. Milestone number

Milestone number: MS1, MS2, ..., MSn

19. Review number

Review number: RV1, RV2, ..., RVn

20. Installation Number

Number progressively the installations of a same infrastructure. An installation is a part of an infrastructure that could be used independently from the rest.

21. Installation country

Code of the country where the installation is located or IO if the access provider (the beneficiary or linked third party) is an international organization, an ERIC or a similar legal entity.

22. Type of access

- VA if virtual access,
- TA-uc if trans-national access with access costs declared on the basis of unit cost,
- TA-ac if trans-national access with access costs declared as actual costs, and
- TA-cb if trans-national access with access costs declared as a combination of actual costs and costs on the basis of unit cost.

23. Access costs

Cost of the access provided under the project. For virtual access fill only the second column. For trans-national access fill one of the two columns or both according to the way access costs are declared. Trans-national access costs on the basis of unit cost will result from the unit cost by the quantity of access to be provided.

TECHNICAL ANNEX

Project acronym:	RAFF
Project title:	RISK ASSESSMENT OF FINAL PITS DURING FLOODING
Grant Agreement N°:	<i>(will be attributed by the Commission)</i>

B2-1 PROJECT OBJECTIVES

State the project objectives in a concise manner (**½ to 1 page maximum**).

Almost all post exploitation open pit voids in the world are shaped as a final reservoir intended to be filled with water. In Europe, the creation of water reservoirs is the most common way of reclaiming post exploitation voids.

Up to now, in Europe, there is no precedent for the creation of a pit lake of a brown coal open pit mine of the size of the Bełchatów mine (area ca. 3400 ha and depth 280 m). There are many examples of flooded smaller final pits and in some of these, during the process of filling with water, serious geotechnical problems have been encountered. It is expected that during reclamation of open pits of Bełchatów's size the scale of geotechnical problems will be significant and may impede the process of filling the voids with water.

Almost all such artificial lakes are currently (and in the future) dedicated to recreational purposes. To ensure safe utilization of these localities by the public, it is necessary to assess the risk of instability of these areas, and evaluate the long-term monitoring. The main objectives for monitoring the abandoned open-pit mines are: geotechnical stability of the close vicinity and especially the slopes (both under the water level and the final slopes around the lake); the quality of water (chemical composition), not only in the lake itself but also in the close vicinity and all water feeding into the lake. Very often the final slopes of the lakes are formed from the former outer dumps of the original open-pit mines and can contain minerals which can be washed down into the lake. Some of the new artificial lakes are closed systems without natural inflows and outflows and the quality of water can be very mutable.

Within the project it is planned to enrich our knowledge about flooding processes from existing flooded pit lake sites, in the Czech Republic and Poland. The great opportunity is that final post exploitation activities in Józwin Open Pit (Konin Lignite Basin) will be ongoing parallel to the project.



On this basis an operational guidelines and methodology for dealing with the flooding of the open pit mines will be developed. It will give the possibility to create optimization methods for flooding processes of the final pits in lignite mines and in open pits partially backfilled with waste rock materials from underground coal exploitation and to minimize geotechnical hazards.

The project will allow for further development of technological methods to minimize the amount of earth works necessary during the preparation of the final reservoir slopes, and to decrease the costs and duration of reclamation works.

The project aims to produce a coherent system of risk assessment for post exploitation of open pits during flooding with water (Deliverable D4.3.1). Risk assessments will be prepared in final stages of the project for lignite open cast mines scheduled for flooding.

B2-2 WORK PACKAGE DESCRIPTION**WP No****0**

Work package Title	Coordination and management of the project.	Person-Months
WP Leader (full name or acronym)	POLT	8,75
Participants, linked third parties and subcontractors (full name or acronym)	VUHU	4,2
	TUC	4,2
	INERIS	4,2
	CERTH	4,2
	UoN	4,2
	GiG	3,99
	UP	4,2
	PKU	4,2
	CTL	3,63
	SUB	4,2
	CEO	4,2
Total		54,17

1 – Objectives

(Objectives clearly stated in a concise manner using bullet points (½ page)).

The specific objectives are,

- coordination of cooperation between project partners and communication between them
- dissemination of project results during project realization and after project termination

2 - Work programme and distribution of tasks

(Provide a detailed description of the work in each Task and specify the contribution of each participant/linked third party/subcontractor involved).

Task 0.1 Project coordination

In order to assure proper realization of tasks foreseen in the project, the coordinator of the project will be responsible for: day-to-day project management; contacts with project partners; archiving of all data and documents related to project realization; organization of work progress meetings enabling discussion on project progress and planning of forthcoming tasks; control of promotional activities of project results; development of project realization reports. Project partners: delivery of collected data to project leader; cooperation with project leader; participation at work progress meetings, delivery of internal reports enabling preparation of progress reports for the Commission. The coordinator will present the progress of the work and the results during the TGC meeting during the life of the project.

Task 0.2 Project promotion and dissemination (All)

Broad promotion activities are foreseen within the project. All project partners will be involved in project promotion and especially WP leaders. The main project promotion activities are:

- Project website. A project website including details about project aims and research tasks will be developed. All partners will contribute by updating the project documents and sharing research results.
- Papers in scientific journals. Project partners will be responsible for publishing papers in national and international journals/magazines
- Participation in scientific conferences and fairs and presentation of project results (papers; roll-ups, etc.)

POLT will organize an international conference near the completion of the project. During the conference, all project results and achievements will be presented. In the conference the project (RAFF) results will be presented and published in the proceedings.

3 - Interrelation with other work packages (please give WP No)

(Briefly describe the interrelation with the other WPs).

Strategy of communication between project partners is an integrated part of the project aiming at proper coordination of the project and dissemination of its results. This work package is strictly correlated with other technical work packages.

4 - Deliverables and milestones

(Define the deliverables and milestones, give the foreseen date of production and assign them to a responsible partner).

D01.1 Reports (POLT and all).

D0.2.1 Web site presenting project results and implementation. (POLT and all)

D0.2.2 Monograph from final conference presenting project achievements. (All)

B2-2 WORK PACKAGE DESCRIPTION

WP No

1

Work package Title	Identification of problems and threats in the final pits	Person-Months
WP Leader (full name or acronym)	VUHU	24
Participants, linked third parties and subcontractors (full name or acronym)	POLT	21,3
	TUC	12,8
	INERIS	5,4
	GiG	7,94
	UP	8,0
	PKU	15,4
	CTL	6,24
	SUB	8,5
	CEO	14,5
Total		124,08

1 – Objectives

(Objectives clearly stated in a concise manner using bullet points (½ page)).

In this WP, previously flooded open pits will be chosen for gathering information about crucial factors that influence pit lakes during the flooding process. The specific objectives are:

- Analyse archival data and previous designs regarding previously flooded pits.
- Identify crucial geological factors which can influence the flooding process.
- Conduct in-situ surveys of the base and slopes of flooded artificial reservoirs.
- Compare archival designs to current situations (including issues during flooding) in artificial lakes.

2 - Work programme and distribution of tasks

(Provide a detailed description of the work in each Task and specify the contribution of each participant/linked third party/subcontractor involved).

In this WP, previously flooded open pits will be chosen for gathering information about crucial factors that influence the stability of slopes during the flooding process. Knowledge obtained by comparing the original design and the actual state of final reservoirs will enable the minimisation of risks in future flooding of open pits. Planned multiple test site investigations will contribute to better generalization of obtained results, which will be valuable for the next stages of the project.

Task 1.1 Analysis of archival data and previous designs (VUHU, POLT, TUC, GIG, UP, PKU, CTL, CEO)

For the chosen flooded open pits, all available information regarding geological, geotechnical and hydrogeological conditions will be analysed. Archival designs on which the flooding process was conducted will be reviewed by comparison with *in-situ* surveys.

VUHU, in cooperation with PKU, will provide archival data about the design and realisation of the three large artificial lakes in Northern Bohemia, Czech Republic: Lake Medard, Lake Milada and Lake Most. POLT will collect data from previously flooded pit in Konin Lignite Basin in Greater Poland and UP from CEO Mines.

The first step will be gathering historical data including following:

- digitalization of the original landscape status
- digitalization of the status at the termination of mining activities
- analysis of the original morphology
- hydrology of the original area
- geology of the original area
- hydrogeology of the original area
- pedology of the original area
- description of the carried out bore hole survey
- foundation of the inner dump areas
- description of materials deposited in the inner dump areas (volumes, characterization)
- geotechnical problems faced during construction and their resolution
- hydrogeological problems faced during construction and their resolution
- installed drainage systems
- installed hydrogeological bore holes

The description of the current status will consist of:

- morphology of the lake neighbouring landscape
- analysis of the current hydrological system in the lake basin
- monitoring system of water quality of surface inflows – influence on the quality of water in the lake
- geotechnical problems and their distribution
- documentation of bore holes
- remediation activities
- pedology

The main activities will be focused on the complex description of the design and creation of areas surrounding Lake Most.

The survey will be divided into 4 separate parts that differ in their geotechnical conditions:

- 1) Střimická výsypka – the artificial final slope of the area originated from the former outer dump of the lignite mine
- 2) northern slopes – with specific drainage systems of the local creek – Bílý potok
- 3) sealing dam section – protection against leakage from the distant ash depository
- 4) southern slopes – description of the river Bílina riverbed

Similar data will be provided for Lake Milada and Lake Medard and flooded open pit in Konin Basin.

Moreover, for comparative goals, similar activities are planned for Maczki-Bór (CTL) open pit which is currently being backfilled with waste rock material from underground exploitation of hard coal in central Silesia. GIG and CTL will gather all information about this test site.

TUC will define the specifications of the data management system that will be used for the collection, affirmation, storage and retrieval of the above information.

Task 1.2 Survey of bottom and slopes of flooded artificial reservoirs (POLT, VUHU, PKU, INERIS)

This task will allow determination of reservoir geometry changes in slopes after flooding to assess the long-term stability. In this task *in-situ* measurement of flooded reservoir geometry will be performed. The measurement will be conducted on artificial reservoirs such as flooded open pits or artificial lakes. The survey will be done using hydro acoustical methods. POLT with VUHU and PKU will do bathymetry survey in chosen areas of flooded pits. The number of surveys will be determined on the basis of Task 1.1

INERIS will perform surveys with long range scan laser to obtain digital elevation models (DEM) of the reservoirs slopes for 3D modelling of slopes which will be used for later local scale stability assessment.

Within this task, PKU will also install 2 evaporimeters on both lakes Milada and Most and monitor evaporation from water level which is a key factor influencing hydrological balance.

Task 1.3 Identification of critical factors which influence flooded open pits (POLT, VUHU, TUC, SUB, GIG, CTL, UP, CEO)

Information gathered within tasks 1.1 and 1.2 will be the basis for identification of crucial parameters: factors and conditions which should be taken into consideration in case of flooding new open pit mines. This will be done by comparison of previous task results and working experience of industrial partners.

The main areas of POLT's, UP's, GIG's and VUHU's investigation with cooperation with industrial partners will relate to the understanding of the hydrogeological conditions – underground water flow and its influence on water quality, influence of the slope's saturation by water on the stability of final slopes, balance of the water inflows and outflows, and comparison with water evaporation influencing the closed-system of the artificial lakes. The data collected in Task 1.1 will be analysed by employing multivariate statistics methods (multiple variable correlations, factors and cluster analysis) to aid in the identification of the crucial factors. This analysis will be performed by TUC. Based on the results of aforementioned statistical analysis, SUB will focus on the identification of hydrogeological and geotechnical factors which influence the stability of final pit slopes and the surface. Special emphasis will be placed on:

- Influence of the flooding process on acid water inflow in groundwater and aquifers around the open pit. Local and regional analyses will be undertaken.
- Factors influencing pit wall instability during and after flooding process.
- Inner dump instability during and after flooding.

These factors induce changes in water table level as well as in pore pressure values and will be taken into account when carrying out further modelling and numerical analysis.

3 - Interrelation with other work packages (please give WP No)

(Briefly describe the interrelation with the other WPs).

Results of this Work Package will give additional information for WP-2 and WP-3 and will allow for setting guidelines for creating comprehensive models of final pits in WP-4.

4 - Deliverables and milestones

(Define the deliverables and milestones, give the foreseen date of production and assign them to a responsible partner).

D1.1.1 Report on archive designs – Q3 – partner responsible: VUHU

D1.2.1. Report on in situ surveys of artificial reservoirs - Q4 – partner responsible: POLT

D1.3.1 Identification of crucial factors influencing on flooding process – Q5 – partner responsible:
SUB

B2-2 WORK PACKAGE DESCRIPTION

WP No

2

Work package Title	Geotechnical characterisation and modelling of reservoir slopes	Person-Months
WP Leader (full name or acronym)	UoN	55,2
Participants, linked third parties and subcontractors (full name or acronym)	POLT	17,5
	VUHU	17,5
	TUC	34
	INERIS	7,7
	CERTH	16,8
	GiG	11,25
	UP	7,0
	PKU	3,5
	CTL	4,92
	SUB	15,2
	CEO	3,5
	POLT subcontr.	12,2
	VUHU subcontr.	36,2
Total		242,47

1 – Objectives

(Objectives clearly stated in a concise manner using bullet points (½ page)).

This WP aims to provide a detailed understanding of how relevant material properties and geological features can impact on both the short- and long-term stability of reservoir slopes.

The WP is achieved through the following tasks:

- Evaluation of geological/geotechnical data relating to stability issues arising during reservoir flooding.
- Laboratory and *in-situ* tests of materials used in construction of final slopes, including effect of dumping methods and influence of time on material properties.
- Geotechnical centrifuge modelling of reservoir slopes
- Numerical modelling of reservoir slopes.
- Numerical modelling of inner dumps and backfill material.

2 - Work programme and distribution of tasks

(Provide a detailed description of the work in each Task and specify the contribution of each participant/linked third party/subcontractor involved).

Task 2.1 Evaluation of geological/geotechnical data relating to stability issues arising during reservoir flooding (POLT, VUHU, UoN, UP, SUB, GIG, CTL)

In this task, a detailed analysis of actual geotechnical/geological situations in slopes within final reservoirs will be conducted. This task will rely heavily on the data obtained during WP1, and will interrogate the data specifically to determine which geological/geotechnical parameters are most relevant in terms of reservoir stability issues. This information will guide the design of the modelling activities in Tasks 2.3 and 2.4. The analysis will include the effect of geological structures which occur in the vicinity of investigated final reservoirs (POLT, VUHU, UP). These structures usually have a significant influence on stability issues during the filling process. An outcome of this task will be a set of guidelines regarding the appropriate testing that should be conducted on materials that may affect the stability of reservoir slopes (deliverable D2.1.1).

SUB, GIG and CTL will evaluate and characterize factors studied in WP1 connected to the following aspects:

- Influence of water saturation in the rock mass mechanical properties (GIG will carry out tests on MTS 810 and 815 strength tester),
- Relation and correlation between water content and Uniaxial Compressive Strength for pre-stripping materials and for waste materials.
- Hydraulic properties: scale effect in permeability values and total porosity (void ratio) regarding natural formations and back fill materials (GIG's methodology: porosity and permeability of rock material)

UoN will work with the task partners to ensure that the outcomes of this task are appropriately used in the design of the programme of physical modelling experiments in Task 2.3.

Task 2.2 Laboratory and in-situ tests of materials used in construction of final slopes, including effect of dumping methods and influence of time on material properties. (POLT, VUHU, TUC, UoN, GIG, PKU, CTL, CEO)

This task will undertake a programme of laboratory and in-situ tests in order to evaluate the properties of the materials used within the construction of reservoir slopes. The effect of material placement (dumping) and preparation methods will be considered. The effect of time, stress level, and moisture content on material properties will also be studied (i.e. changes of geotechnical and hydrogeological properties with regard to time, moisture content, and pressure). It is anticipated that data from WP1 and results from Task 2.1 will indicate that negative pore water pressures play a role in the stability of the slopes. The potential for the development of negative pressures within the types of soils identified will be evaluated. The degradation (weathering) of spoil materials from mines can have important effects on material properties, which may adversely affect the stability of reservoir slopes. Material heterogeneity and its impact will also have an effect on stability issues. The degree of heterogeneity will be ascertained in part by the in-situ testing conducted in Task 2.1; however in addition to this, the laboratory testing will attempt to evaluate the degree of variability of materials within the slopes.

The modern geomechanical laboratory facilities at UoN, GIG and TUC will be used for the thorough characterisation of the materials. These facilities include traditional, stress-path, unsaturated, and high pressure (up to 64MPa) triaxial systems, as well as creep testing facilities. In addition to other triaxial testing, TUC will conduct bender element testing to evaluate stiffness at very small strains. UoN also has a unique large-diameter triaxial (up to 300mm diameter and 450mm length samples) which can be used to evaluate 'averaged' properties of highly heterogeneous samples, and access to X-ray diffraction (XRD) and Micro computed tomography (micro-CT) scanning equipment. GIG will concentrate on rock property testing (e.g. porosity, compressibility and permeability of rock debris) which are used for carboniferous rocks being used for Maczki-Bór partial backfilling.

In the chosen areas of flooded pit banks, CPT/CPTu and geophysical measurements will be undertaken by subcontractors of POLT and VUHU. This will provide a quick, reliable and economic means of determining soil stratigraphy, relative density, strength, and equilibrium groundwater pressures. In addition, TUC will conduct geophysical surveys to locate structural discontinuities within the ground in areas selected in WP-1. Moreover TUC will determine the lithology, grain size composition, permeability, saturation, compaction and rigidity of the underground geological formations in order to assess their behaviour after flooding.

POLT will provide samples from Polish pit lakes, VUHU and PKU from Czech Republic, GIG and CTL from Maczki-Bór test site and CEO from Romanian open cast mine.

Task 2.3 Geotechnical centrifuge modelling of reservoir slopes (UoN, POLT, VUHU, GIG)

Small-scale experiments conducted within a laboratory (i.e. physical modelling) provide a cost-effective means of testing a large-scale prototype system. A physical model benefits from the ability to have good control over material properties and boundary conditions. However, for geotechnical systems, testing of small-scale models at 1-g (where g = gravity) is often insufficient since the behaviour of soil is strongly dependant on stresses (which are much lower in the small-scale model than the full-scale prototype). Geotechnical centrifuge modelling enables researchers to reproduce full-scale prototype stresses within small-scale experiments by creating a local environment of elevated acceleration within the centrifuge model. By increasing acceleration (i.e. increasing gravity) by a factor of N , the self-weight of the materials within the model increases by a factor of N . Therefore, the model is representative of a prototype N times larger. Scaling laws have been derived which allow the translation of model-scale results to prototype scale values, for example distance scales by N , hence a model dimension of 100mm scaled by $N=100$ represents a prototype distance of 10m. The UoN 50g-tonne, 2m radius geotechnical centrifuge is one of only five similar sized machines operational within the UK (acquired in 2005 as part of a £950k UK research grant) and has been used on several RFCS projects for the study of problems related to mine slopes (SLOPES project), the effect of mining subsidence on buildings (COMEX project), and the stability of mine shafts (MISSTER project).

The UoN geotechnical research centre has recently been used to simulate the stability of open-pit lignite mine slopes as part of the RFCS SLOPES project. The developed equipment allows testing of geo-materials within a plane-strain and climate-controlled chamber with an extensive set of instrumentation (positive and negative pore pressures, surface and sub-surface displacements using digital image analysis, humidity measurement). The testing apparatus enables the simulation of prototype slopes of up to 40m in height, can include variations of soil materials and geological features, and can simulate the variation of water levels within a reservoir. The data collected from Tasks 2.1 and 2.2 will inform the design of a programme of tests aimed at evaluating the detailed relationship between geotechnical/geological conditions and the stability of the reservoir slope before, during, and after being filled with water, as well as during seasonal water level fluctuations. Instrumentation (e.g. for pore-pressure changes and ground movements) will ensure that an in-depth understanding is gained of the response of the geotechnical system to the change in hydraulic conditions. The accelerated time-scale for seepage within the centrifuge makes it ideal for studying such problems, since both distance and flow velocity scale by a factor of N , resulting in a model simulation time which is reduced by N^2 . The result is that a year of seepage flow (e.g. due to reservoir filling) in the field can be simulated in a matter of hours in the centrifuge. However, the modelling of unsaturated soils, which are anticipated to have an important role in the stability of the slopes, within the centrifuge poses challenges which the research conducted in this project will aim to address. Outcomes of the recently completed RFCS SLOPES project enabled a better understanding of how unsaturated soils behave in a centrifuge model, but more work is needed to achieve a comprehensive test methodology for unsaturated slopes. This task includes the ambitious aim of developing this novel methodology for modelling unsaturated slopes in a geotechnical centrifuge, which would provide a significant advancement to the international centrifuge modelling community.

The programme of centrifuge tests aims to consider varying slope geometries (with input from

WP1), material properties, including the degree of material heterogeneity (with input from WP1 and Task 2.2), geological features (with input from WP1), initial water level and rate of water infilling. Design of the test programme and selection of model materials and geometries, as well as location of instrumentation, will be done in cooperation with project partners POLT, VUHU, and GIG, who have direct involvement with in-situ measurements; this will ensure compatibility between centrifuge tests and field scenarios. Outputs will be verified, where possible, against field measurements obtained from Task 2.2. Test results will provide valuable data for input into the risk assessment tools within WP4. In addition, results will be used to validate the numerical models included in Task 2.4.

Task 2.4 Numerical modelling of reservoir slopes (TUC, POLT, VUHU, CERTH, UoN, SUB, INERIS)

CERTH and UoN will try to replicate, via finite element/finite difference numerical simulations using proficient finite element analysis software (e.g. Plaxis 2D/3D, RS2/RS3, ABAQUS, FLAC 2D/3D), the physically modelled scenarios of Task 2.3. UoN will work with CERTH to provide the validation data from the centrifuge tests. Similarities and differences between these two methods of analysis will be identified and thoroughly interpreted. UoN will conduct modelling and focus on evaluating two key aspects: (1) the effect of unsaturated soil behaviour on the centrifuge on experimental outcomes, and (2) the effect of material heterogeneity on stability calculations. These two aspects were highlighted as being of critical importance from the outcomes of the RFCS SLOPES project. Aspect (1) needs further research in order to improve the applicability of centrifuge modelling to the modelling of slopes with unsaturated slopes, whilst aspect (2) involved a novel numerical modelling approach using multivariate random fields to evaluate the development of slip surfaces within unsaturated slopes and the potential for slope instability.

Numerical models present the possibility (due to their efficiency) of testing extra scenarios of reservoir pit slopes compared to centrifuge modelling. Alterations of the ground water regime, resulting from changes to the water filling elevation inside the pit reservoir, both on steady-state and transient conditions will be investigated for their influence on the stability and performance of the flooded pit slopes. Long-term deterioration of discontinuities due to presence of water and the induced reduction of their shear strength will be taken into account. Compiling all the above components of analysis, a baseline numerical model that can be applied to other respective situations will be established. As a result, the critical geotechnical and hydraulic parameters concerning the reservoir stability will be determined and the expected behaviour of the mine pit lake will be estimated. Models will be done for PKU, CTL, and Józwin Open Pit.

INERIS will study the long-term behaviour of flooded open pit mines. 3D hydromechanical modelling using FLAC3D (FDM) will be carried out based on a simple open pit geometry. Three configurations of slope will be considered: stable (initial safety factor=1.5), critical situation (initial safety factor=1.1) and unstable configuration (initial safety factor=1). The long-term behaviour will be considered by reducing the elastic and plastic constitutive law parameters (E , ν , c and ϕ). Softening will be adopted to better present the relation between post-peak behaviour and potential failure zones. The deterioration of parameters will be related to water level variation and time effects. Graphical charts will be proposed to identify the tendency of the relation between slope stability (global safety factor) and water variation. In addition, the results will be analysed in terms of potential failure zone localization and mechanism.

TUC and SUB will develop models aiming to evaluate stability in:

- Pit walls.
- Inner dumps.

Models will focus on the effect of the bedding plane (orientation, material's physical and mechanical properties, water level) located at the inner dump foundation (this boundary is a critical discontinuity due to its poor mechanical properties).

Also, a study of the effect of the high stress conditions on the basal waste materials will be undertaken.

Regarding environmental risks at mine closure, SUB will investigate the following effects:

- Hydraulic sink effect to avoid contamination of ground water; a sensitivity analysis will be

carried out.

- Varying hydraulic properties of the inner waste materials.
- Varying of the pit water balance under post closure conditions.

Geometrical models of pit lakes will be prepared by POLT and VUHU. The geometry of the models will include the boundaries of the geological formations and the stages of the lake construction, while the faults will be modelled as interface elements. After the completion of the geometry model, the boundary conditions will be applied and model calibration will follow. If the simulated response of the mine pit and the estimation of soil behaviour is in agreement with the field observations, the model will be used for estimating the expected movements in the subsequent stages of flooding.

3 - Interrelation with other work packages (please give WP No)

(Briefly describe the interrelation with the other WPs).

This WP is largely dependent on WP-1 from which the key factors influencing on final reservoirs will be taken. WP-2 will generate a basis for an assessment which will be done in WP-4 by preparing numerical models of soils in flooded final pits.

4 - Deliverables and milestones

(Define the deliverables and milestones, give the foreseen date of production and assign them to a responsible partner).

D2.1.1 Guidelines regarding the appropriate testing that should be conducted on materials that may affect the stability of reservoir slopes. – Q6 – partner responsible: VUHU

D2.2.1 Results of laboratory and in-situ testing of materials used in construction of final reservoir slopes – Q8 – partner responsible UoN

D2.3.1 Preliminary results of physical modelling of reservoir slopes – Q8 – partner responsible: UoN

D2.3.2 Final results of physical modelling of reservoir slopes – Q11 – partner responsible: UoN

D2.4.1 Preliminary results of numerical modelling of reservoir slopes – Q9 – partner responsible - TUC

D2.4.2 Final results of numerical modelling of reservoir slopes – Q11 – partner responsible - TUC

B2-2 WORK PACKAGE DESCRIPTION**WP No****3**

Work package Title		Person-Months
	Development of methodology and tools for assessment of hydrodynamical and hydrochemical conditions changes in open pit mines and their surroundings	
WP Leader (full name or acronym)	POLT	29
Participants, linked third parties and subcontractors (full name or acronym)	VUHU	15,3
	TUC	11,5
	GiG	26,48
	UP	7,8
	PKU	2,1
	CTL	2,09
	CEO	3,1
Total		97,37

1 – Objectives

(Objectives clearly stated in a concise manner using bullet points (½ page)).

This WP aims to provide detailed understanding water condition changes and their influence on water quality in the pit.

The WP will be achieved through the following tasks:

- Evaluation of hydrogeological data relating to groundwater conditions and water quality issues arising during reservoir flooding
- Assessment of pollution vulnerability of groundwater
- Numerical modelling of water conditions during and after pit lake flooding
- Numerical modelling of water conditions in partially backfilled waste rock material from underground exploitation of coal open pit
- Conceptual development and testing on numerical model methods of optimal protection and groundwater monitoring

2 - Work programme and distribution of tasks

(Provide a detailed description of the work in each Task and specify the contribution of each participant/linked third party/subcontractor involved).

Task 3.1. Evaluation of open pit hydrogeological conditions. (POLT, VUHU, GIG, UP, CTL, CEO, PKU)

An evaluation of geological, hydrogeological and hydrochemical conditions will be undertaken by POLT in post exploitation voids in Konin Basin by VUHU in three large artificial lakes in Northern Bohemia (PKU), and by GIG in Maczki-Bór (CTL), with the identification of existing and potential hazards to the water environment. This task is essential for an accurate representation of water conditions in the hydrogeological model of selected sites.

Activities on selected test sites will include:

- Identification of factors determining groundwater flow and changes in water quality
- Identification of contaminants within the test sites

UP and CEO will classify lignite open pits (and remaining voids) from a hydrogeological point of view.

Task 3.2. Methodology for the assessment of groundwater pollution vulnerability (GIG, POLT, PKU, CTL)

The task includes development of methods to assess the vulnerability of groundwater pollution for pit lakes and closed open pit mines from leaching. The assessment of groundwater vulnerability will use a rank analysis based on conditions researched in WP1. This new ranked assessment of aquifer vulnerability to pollution will be reviewed on test sites.

The main test sites will be Józwin Open Pit which final post exploitation activities will begin in 2019 and lakes belonging to PKU.

Another object for this task will be Maczki-Bór (CTL) pit which is partially backfilled with waste rocks from underground mining of hard coal.

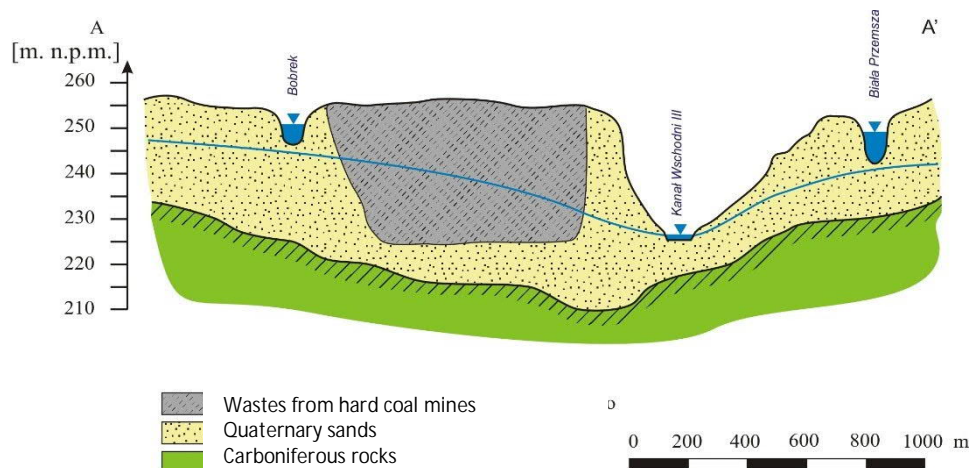


Figure 2 Schematic cross-section through the area of reclaimed CTL Maczki-Bór open pit

The test will be done on real object by GIG and POLT and will be compared with the numerical model created in Task 3.3 it will give a possibility to create methods to ensure the optimal protection of groundwater and its monitoring.

Task 3.3. Numerical modelling of hydrogeological conditions (POLT, VUHU, GIG, TUC, PKU, CTL)

Within this task hydrogeological models for test sites will be prepared. Models will contain hydrodynamic and water quality models. Based on the hydrodynamic representation of conditions in the model, water quality investigations over different scenarios will be performed.

Models will improve the understanding of the water systems and will allow quantification of the

3 - Interrelation with other work packages (please give WP No)

(Briefly describe the interrelation with the other WPs).

This WP is largely dependent on WP-1 from which the key factors influencing on final reservoirs will be taken and laboratory tests performed in WP-2. WP-3 will generate a basis for an assessment which will be done in WP-4. In this work package a hydrogeological component of models for WP-4 will be prepared.

4 - Deliverables and milestones

(Define the deliverables and milestones, give the foreseen date of production and assign them to a responsible partner).

D3.1.1 Report on evaluation of hydrogeological conditions in test sites. – Q6 – partner responsible: POLT

D3.2.1 Guidelines for groundwater pollution vulnerability assessment. – Q9 – partner responsible: GIG

D3.3.1 Numerical models of hydrogeological conditions – Q11 – partner responsible: POLT

B2-2 WORK PACKAGE DESCRIPTION

WP No
4

Work package Title	Development of comprehensive models of final pits and risks assessment.	Person-Months
WP Leader (full name or acronym)	INERIS	10,4
Participants, linked third parties and subcontractors (full name or acronym)	POLT	12,2
	VUHU	14,0
	TUC	11,5

	CERTH	28,3
	GiG	2,96
	PKU	0,7
	CTL	1,12
	SUB	4,26
	CEO	0,7
Total		86,14

1 – Objectives

(Objectives clearly stated in a concise manner using bullet points (½ page)).

The objective of this WP is the elaboration of an assessment methodology of risks which may affect flooded open pit mines. This will be done through the following tasks:

- Development of a reliability methodology for assessing the long-term stability of flooded open pit mines
- Elaboration of a comprehensive risk assessment methodology of flooded open pit mines
- Elaboration of guidelines for risks assessment during and after flooding of final pit

2 - Work programme and distribution of tasks

(Provide a detailed description of the work in each Task and specify the contribution of each participant/linked third party/subcontractor involved).

The task 4.1, 4.2 and 4.3 will be organized in parallel to give for end-users (mine operators, mine authority, administration, etc.) a very operational and comprehensive guideline for dealing with the flooding of the abandoned open pit coalmine in Europe and over the world.

Task 4.1 Development of a reliability methodology for assessing the long-term stability of flooded open pit mines (INERIS, CERTH)

CERTH and INERIS will use the results and the feedback of the finite element method baseline model established in Task 2.4 (numerical modelling of reservoir slopes) for developing a reliability methodology applied on the stability of reservoir pit slopes. Reliability concepts offer the possibility to take into consideration the geotechnical uncertainty of the main variables into the safety and performance issues. The geometrical and geotechnical parameters will be investigated for the determination of their influence in reservoir pit slopes stability by carrying out a set of parametric numerical models using the distribution laws of the critical geometrical and geotechnical parameters. In particular, shear strength (friction angle, cohesion) of discontinuities and permeability of soils will be studied in detail through parametric analyses to evaluate the weight of their uncertainties on slope stability. The variation of the parameters will be considered from laboratory tests and feedback of precedent work packages. The use of the Point Estimate Method (PEM) combined with a deterministic numerical modelling approach will enable to reveal some critical and complementary aspects of reservoir pit slope safety such as its probability of failure or the probability of its inadequate performance. Reliability outcome can be utilized for the robust assessment of risks associated with slopes of flooded open pits.

Task 4.2. Elaboration of a comprehensive risk assessment methodology of flooded open pit mines (CERTH, POLT, VUHU, TUC, INERIS, SUB, GIG)

In this task, combined models for the final pits, based on the results obtained in the previous tasks of the project (WP1 and WP3), will be created. Based on these models, time depended risk assessments for flooding of the final pit will be suggested. It must be emphasized that the first of these models will be built on the basis of previously flooded artificial reservoirs (Lake Most). This methodology, using existing data related to changes that occurred from the start of flooding to present day, will allow for an effective validation of the model. The complicated hydrological and geotechnical model of Lake Most and its surroundings will enable the interaction between water and geological formations to be accounted for (CERTH, VUHU). The model will be complemented with data relating to precipitation and description of specific site characteristics, including occurrence of interesting flora and fauna.

The second model will be built to describe future flooding processes in real lignite open pit mines which are predicted to be filled with water (POLT, CERTH).

Finally a third model for the partially backfilled open pit at Maczki-Bór will be developed (GIG, POLT, CERTH). In this mine the waste from the underground exploitation of hard coal in central Silesia were used as backfilling material.

SUB with the contribution of the rest of the partners involved within this task will analyse results from WP2 and the models performed, aiming to detect, confirm, and quantify the influence of the factors taken into account. As input for the developed tool, values of these factors and corrective and protective measurements will be proposed, in an interactive chart with the following content:

- Geological and geotechnical factors influencing slope stability during and after flooding process.
- Weak points and areas related to inner dump behaviour.
- Hydraulic sink effects and risks related to ground water contamination.

TUC and INERIS will work together to develop a Probabilistic Risk Assessment (PRA) method to evaluate the risks associated with flooding process of the pit. More specifically PRA will focus on

the estimation of the likelihood of occurrence of slope failure and/or seepage from pit lake and their consequence on human life, water quality, wildlife and operations. The risk assessment will focus on the level of hazard and monitoring strategies for hazard reduction. The risk assessment result will be a sort of risk map with different levels of risks and different levels of safety measurements should be applied on the site to ensure the safety and the security of the population.

Task 4.3 Elaboration of guidelines for risks assessment during flooding of final pit (INERIS, POLT, VUHU, CERTH, SUB, GIG, CTL, CEO, PKU)

In this task, a decision support tool for the identification and the assessment of potential risks during flooding of the final pit will be developed and presented as guidelines for future flooded open pit mines in European coal mines. The guidelines will be based on the in-situ investigations and the numerical and physical modelling from WP2 to identify the main factors to assess the stability of a flooded open pit mine. It is anticipated that these guidelines and tools could be applied for the majority of the open cast mines planned for flooding.

INERIS and other partners involved in this task will suggest the structure of the guidelines considering the existing methodologies. A group of experts will be created to validate the structure of the guidelines. All indicators and criteria used in the guidelines will be clearly described for a future application by the end-users. The guidelines will be organized to deal with different types of stability issues: local, regional and large scale. The guidelines will take into consideration the European practices regarding safety and security of industrial installations and infrastructures, as well as the differences in the existing relevant regulations in the various European countries.

3 - Interrelation with other work packages (please give WP No)

(Briefly describe the interrelation with the other WPs).

This work package is linking all previous work packages and presents the main final contribution of the project. It is largely dependent upon investigations done in WP-1 and adopted guidelines, models and algorithms established in WP-2 and WP-3.

4 - Deliverables and milestones

(Define the deliverables and milestones, give the foreseen date of production and assign them to a responsible partner).

D4.1.1 Development of a reliability methodology for assessing the long-term stability of flooded open pit mine – Q12 - partner responsible: INERIS

D4.2.1 Comprehensive risk assessment of flooded open pit mines – Q12 – partner responsible: CERTH

D4.3.1 Operational guidelines for risk assessment of final pits during flooding – Q12 – partner responsible: INERIS

ESTIMATED BUDGET FOR THE ACTION (page 1 of 2)

Estimated eligible ¹ costs (per budget category)										EU contribution			Additional information					
A. Direct personnel costs	B. Direct costs of subcontracting	C. Not applicable	D. Other direct costs		E. Indirect costs ²	F. Not applicable ⁵				Total costs	Reimbursement rate %	Maximum EU contribution ³	Maximum grant amount ⁴	Information for indirect costs	Information for auditors	Other information:		
A.1 Employees (or equivalent)	A.4 SME owners without salary		D.1 Not applicable	D.3 Operating costs														
A.2 Natural persons under direct contract	A.5 Beneficiaries that are natural persons without salary		D.2 Equipment											Estimated costs of in-kind contributions not used on premises	Declaration of costs under Point D.4	Estimated costs of beneficiaries/ linked third parties not receiving EU funding		
A.3 Seconded persons																		
Form of costs ⁶	Actual	Unit ⁷	Unit ⁸		Actual	Actual	Actual	Actual	Flat-rate ⁹		Unit ¹⁰	Unit ¹¹						
	a	Total b	No hours	Total c	d	[e]	f	f1	$g = 0,35 \times (a+c)^{12}$	No units	Total [h1]	Total [h2]	(i)= a+b+c+ d+[e]+f +f1+ g+[h1]+[h2]	j	k	l	m	Yes/No
1. Poltegor	253,825.00			0.00	35,000.00		20,100.00	38,000.00	88,838.75				435,763.75	60.00	261,458.25			
2. VUHU MOST	207,000.00			0.00	100,000.00		9,840.00	33,000.00	72,450.00				422,290.00	60.00	253,374.00			
3. TUC	238,000.00			0.00	0.00		3,000.00	22,500.00	83,300.00				346,800.00	60.00	208,080.00			
4. INERIS	215,090.00			0.00	0.00		16,300.00	16,200.00	75,281.50				322,871.50	60.00	193,722.90			
5. CERTH	256,710.00			0.00	0.00		9,000.00	11,000.00	89,848.50				366,558.50	60.00	219,935.10			
6. UoN	323,927.00			0.00	0.00		11,236.00	55,220.00	113,374.45				503,757.45	60.00	302,254.47			
7. GIG	165,815.00			0.00	0.00		5,500.00	67,000.00	58,035.25				296,350.25	60.00	177,810.15			
8. FME-UP	97,200.00			0.00	0.00		0.00	9,000.00	34,020.00				140,220.00	60.00	84,132.00			
9. PKU	80,290.00			0.00	0.00		0.00	66,000.00	28,101.50				174,391.50	60.00	104,634.90			
10. CTL	25,800.00			0.00	0.00		0.00	26,500.00	9,030.00				61,330.00	60.00	36,798.00			
11. SUBTERRA	139,480.00			0.00	0.00		563.00	14,500.00	48,818.00				203,361.00	60.00	122,016.60			
12. OLTENIA	93,600.00			0.00	0.00		0.00	17,500.00	32,760.00				143,860.00	60.00	86,316.00			
Total consortium	2,096,737.00		0.00	0.00	135,000.00		75,539.00	376,420.00	733,857.95				3,417,553.95		2,050,532.37	2,050,532.37		

ESTIMATED BUDGET FOR THE ACTION (page 2 of 2)

- (1) See Article 6 for the eligibility conditions
- (2) The indirect costs covered by the operating grant (received under any EU or Euratom funding programme; see Article 6.5.(b)) are ineligible under the GA. Therefore, a beneficiary that receives an operating grant during the action's duration cannot declare indirect costs for the year(s)/reporting period(s) covered by the operating grant (see Article 6.2.E).
- (3) This is the theoretical amount of EU contribution that the system calculates automatically (by multiplying all the budgeted costs by the reimbursement rate). This theoretical amount is capped by the 'maximum grant amount' (that the Commission/Agency decided to grant for the action) (see Article 5.1).
- (4) The 'maximum grant amount' is the maximum grant amount decided by the Commission/Agency. It normally corresponds to the requested grant, but may be lower.
- (5) Not applicable.
- (6) See Article 5 for the forms of costs
- (7) Unit : hours worked on the action; costs per unit (hourly rate) : calculated according to beneficiary's usual accounting practice
- (8) See Annex 2a 'Additional information on the estimated budget' for the details (costs per hour (hourly rate)).
- (9) Flat rate : 35% of direct personnel costs (see Article 6.2 point A)
- (10) Not applicable.
- (11) Not applicable.
- (12) Not applicable.
- (13) See Article 9 for beneficiaries not receiving EU funding
- (14) Only for linked third parties that receive EU funding

ACCESSION FORM FOR BENEFICIARIES

VYZKUMNY USTAV PRO HNEDE UHLI AS (VUHU MOST), established in TR. BUDOVATELU 2830/3, MOST 434 01, Czech Republic, VAT number: CZ44569181, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become *beneficiary* No ('2')

in Grant Agreement No 847299 ('the Agreement')

between POLTEGOR INSTYTUT INSTYTUT GORNICTWA ODKRYWKOWEGO-POLTEGOR INSTITUTE INSTITUTE OF OPENCAST MINING **and** the European Union ('the EU', represented by the European Commission ('the Commission'))

for the action entitled 'RISK ASSESSMENT OF FINAL PITS DURING FLOODING (RAFF)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any amendments to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

A large black rectangular redaction box covers the signature area. The box is irregularly shaped, following the outline of the signature, and has small yellow rectangular marks at the corners where it overlaps the text.

ACCESSION FORM FOR BENEFICIARIES

POLYTECHNEIO KRITIS (TUC), established in TERMA AGIOU MARKOU PLATEIA AGIOU TITOU, CHANIA 73132, Greece, VAT number: EL090034024, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become *beneficiary* No ('3')

in Grant Agreement No 847299 ('the Agreement')

between POLTEGOR INSTYTUT INSTYTUT GORNICTWA ODKRYWKOWEGO-POLTEGOR INSTITUTE INSTITUTE OF OPENCAST MINING **and** the European Union ('the EU', represented by the European Commission ('the Commission'))

for the action entitled 'RISK ASSESSMENT OF FINAL PITS DURING FLOODING (RAFF)'.

and mandates

*the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.*

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

A large black rectangular redaction box covers the signature area. The box is composed of several horizontal bars of varying lengths, with small yellow gaps between them, suggesting it was created by a redaction tool.

ACCESSION FORM FOR BENEFICIARIES

INSTITUT NATIONAL DE L ENVIRONNEMENT ET DES RISQUES INERIS (INERIS), established in Parc Technologique Alata, VERNEUIL EN HALATTE 60550, France, VAT number: FR73381984921, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become *beneficiary* No ('4')

in Grant Agreement No 847299 ('the Agreement')

between POLTEGOR INSTYTUT INSTYTUT GORNICTWA ODKRYWKOWEGO-POLTEGOR INSTITUTE INSTITUTE OF OPENCAST MINING and the European Union ('the EU', represented by the European Commission ('the Commission'))

for the action entitled 'RISK ASSESSMENT OF FINAL PITS DURING FLOODING (RAFF)'.

and mandates

the coordinator to submit and sign in its name and on its behalf any amendments to the Agreement, in accordance with Article 55.

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

A large black rectangular redaction box covers the signature area, with several horizontal white lines indicating the original text has been obscured.

ACCESSION FORM FOR BENEFICIARIES

ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS (CERTH), established in CHARILAOU THERMI ROAD 6 KM, THERMI THESSALONIKI 57001, Greece, VAT number: EL099785242, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become *beneficiary* No ('5')

in Grant Agreement No 847299 ('the Agreement')

between POLTEGOR INSTYTUT INSTYTUT GORNICTWA ODKRYWKOWEGO-POLTEGOR INSTITUTE INSTITUTE OF OPENCAST MINING **and** the European Union ('the EU', represented by the European Commission ('the Commission'))

for the action entitled 'RISK ASSESSMENT OF FINAL PITS DURING FLOODING (RAFF)'.

and mandates

*the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.*

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

A large black rectangular redaction covers the signature area. Three horizontal white lines are visible, indicating the redacted text.

ACCESSION FORM FOR BENEFICIARIES

THE UNIVERSITY OF NOTTINGHAM (UoN), established in University Park, NOTTINGHAM NG7 2RD, United Kingdom, VAT number: GB690391225, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become *beneficiary* No ('6')

in Grant Agreement No 847299 ('the Agreement')

between POLTEGOR INSTYTUT INSTYTUT GORNICTWA ODKRYWKOWEGO-POLTEGOR INSTITUTE INSTITUTE OF OPENCAST MINING **and** the European Union ('the EU', represented by the European Commission ('the Commission'))

for the action entitled 'RISK ASSESSMENT OF FINAL PITS DURING FLOODING (RAFF)'.

and mandates

*the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.*

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

A large black rectangular redaction box covers the signature area, with several horizontal white lines indicating the original text has been obscured.

ACCESSION FORM FOR BENEFICIARIES

GLOWNY INSTYTUT GORNICHTWA (GIG), established in Plac Gwarkow 1, KATOWICE 40-166, Poland, VAT number: PL6340126016, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become *beneficiary* No ('7')

in Grant Agreement No 847299 ('the Agreement')

between POLTEGOR INSTYTUT INSTYTUT GORNICHTWA ODKRYWKOWEGO-POLTEGOR INSTITUTE INSTITUTE OF OPENCAST MINING **and** the European Union ('the EU', represented by the European Commission ('the Commission'))

for the action entitled 'RISK ASSESSMENT OF FINAL PITS DURING FLOODING (RAFF)'.

and mandates

*the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.*

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

A large black rectangular redaction box covers the signature area. The box is composed of several horizontal bars of varying lengths, with small yellow rectangular markers at the end of each bar, suggesting a signature that has been completely obscured for security or privacy reasons.

ACCESSION FORM FOR BENEFICIARIES

UNIVERSITATEA DIN PETROSANI (FME-UP), established in UNIVERSITATII STREET 20, PETROSANI 332006, Romania, VAT number: RO4374849, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become *beneficiary* No ('8')

in Grant Agreement No 847299 ('the Agreement')

between POLTEGOR INSTYTUT INSTYTUT GORNICTWA ODKRYWKOWEGO-POLTEGOR INSTITUTE INSTITUTE OF OPENCAST MINING **and** the European Union ('the EU', represented by the European Commission ('the Commission'))

for the action entitled 'RISK ASSESSMENT OF FINAL PITS DURING FLOODING (RAFF)'.

and mandates

*the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.*

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

A large black rectangular redaction box covers the signature area, with several small yellow rectangular marks at the corners and along the edges.

ACCESSION FORM FOR BENEFICIARIES

PALIVOVY KOMBINAT USTI STATNI PODNIK (PKU), established in HRBOVICKA 2, CHLUMEC 40339, Czech Republic, VAT number: CZ00007536, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become *beneficiary* No ('9')

in Grant Agreement No 847299 ('the Agreement')

between POLTEGOR INSTYTUT INSTYTUT GORNICHTWA ODKRYWKOWEGO-POLTEGOR INSTITUTE INSTITUTE OF OPENCAST MINING **and** the European Union ('the EU', represented by the European Commission ('the Commission'))

for the action entitled 'RISK ASSESSMENT OF FINAL PITS DURING FLOODING (RAFF)'.

and mandates

*the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.*

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary



ACCESSION FORM FOR BENEFICIARIES

CTL MACZKI-BOR SPOLKA AKCYJNA (CTL), established in UL. DLUGA, NR 90, SOSNOWIEC 41-208, Poland, VAT number: PL6440513586, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become *beneficiary* No ('10')

in Grant Agreement No 847299 ('the Agreement')

between POLTEGOR INSTYTUT INSTYTUT GORNICTWA ODKRYWKOWEGO-POLTEGOR INSTITUTE INSTITUTE OF OPENCAST MINING **and** the European Union ('the EU', represented by the European Commission ('the Commission'))

for the action entitled 'RISK ASSESSMENT OF FINAL PITS DURING FLOODING (RAFF)'.

and mandates

*the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.*

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

A large black rectangular redaction box covers the signature area, with several horizontal white lines indicating the original text has been obscured.

ACCESSION FORM FOR BENEFICIARIES

SUBTERRA INGENIERIA SL (SUBTERRA), established in CALLE VALLEHERMOSO 30 BAJO A, MADRID 28015, Spain, VAT number: ESB85588549, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become *beneficiary* No ('11')

in Grant Agreement No 847299 ('the Agreement')

between POLTEGOR INSTYTUT INSTYTUT GORNICTWA ODKRYWKOWEGO-POLTEGOR INSTITUTE INSTITUTE OF OPENCAST MINING **and** the European Union ('the EU', represented by the European Commission ('the Commission'))

for the action entitled 'RISK ASSESSMENT OF FINAL PITS DURING FLOODING (RAFF)'.

and mandates

*the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.*

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

[Redacted signature area]

ACCESSION FORM FOR BENEFICIARIES

SOCIETATEA COMPLEXUL ENERGETIC OLTENIA SA (OLTENIA), established in STRADA ALEXANDRU IOAN CUZA 5, TARGU JIU GORJ 210227, Romania, VAT number: RO30267310, ('the beneficiary'), represented for the purpose of signing this Accession Form by the undersigned,

hereby agrees

to become *beneficiary* No ('12')

in Grant Agreement No 847299 ('the Agreement')

between POLTEGOR INSTYTUT INSTYTUT GORNICTWA ODKRYWKOWEGO-POLTEGOR INSTITUTE INSTITUTE OF OPENCAST MINING **and** the European Union ('the EU', represented by the European Commission ('the Commission'))

for the action entitled 'RISK ASSESSMENT OF FINAL PITS DURING FLOODING (RAFF)'.

and mandates

*the coordinator to submit and sign in its name and on its behalf any **amendments** to the Agreement, in accordance with Article 55.*

By signing this Accession Form, the beneficiary accepts the grant and agrees to implement the grant in accordance with the Agreement, with all the obligations and conditions it sets out.

SIGNATURE

For the beneficiary

A large black rectangular redaction covers the signature area. To the right of the redaction, there are three horizontal white lines of varying lengths, each with a small yellow square at its right end, likely representing a signature or a stamp.

print
format A4
landscape

MODEL ANNEX 4 FOR RFCS MGA

FINANCIAL STATEMENT FOR [BENEFICIARY [name]/ LINKED THIRD PARTY [name]] FOR REPORTING PERIOD [reporting period]

Eligible ¹ costs (per budget category)													Receipts	EU contribution		Additional information Information for indirect costs: Costs of in-kind contributions not used on premises o	
A. Direct personnel costs				B. Direct costs of subcontracting	C. Not applicable	D. Other direct costs		E. Indirect costs ²	F. Not applicable			Total costs	Receipts	Reimbursement rate %	Maximum EU contribution ³		Requested EU contribution
A.1 Employees (or equivalent)		A.4 SME owners without salary				D.1 Not applicable	D.2 Equipment	D.3 Operating costs				Receipts of the action, to be reported in the last reporting period, according to Article 5.3.3					
A.2 Natural persons under direct A.3 Seconded persons [A.6 Personnel for providing access to research infrastructure]		A.5 Beneficiaries that				D.1 Not applicable											
Form of costs ⁴	Actual	Unit		Actual	Actual	Actual	Actual	Flat-rate ⁵ 35%	Unit		Unit	k	l	m	n		
	a	Total b		d	[e]	f	f1	h=0,35 x (a+c) ⁶	No units	Total [i1]	Total [i2]					j = a+b+c+d-[e] +f+f1+h+[i1] +[i2]	
[short name beneficiary /linked third party]																	

The beneficiary/linked third party hereby confirms that:
 The information provided is complete, reliable and true.
 The costs declared are eligible (see Article 6).
 The costs can be substantiated by adequate records and supporting documentation that will be produced upon request or in the context of checks, reviews, audits and investigations (see Articles 17, 18 and 22).
 For the last reporting period: that all the receipts have been declared (see Article 5.3.3).

¹ Please declare all eligible costs, even if they exceed the amounts indicated in the estimated budget (see Annex 2). Only amounts that were declared in your individual financial statements can be taken into account later on, in order to replace other costs that are found to be ineligible.

¹ See Article 6 for the eligibility conditions

² The indirect costs claimed must be free of any amounts covered by an operating grant (received under any EU or Euratom funding programme; see Article 6.2.E). If you have received an operating grant during this reporting period, you cannot claim any indirect costs.

³ This is the theoretical amount of EU contribution that the system calculates automatically (by multiplying the reimbursement rate by the total costs declared). The amount you request (in the column 'requested EU contribution') may have to be less (e.g. if you and the other beneficiaries are above budget, if the 80% limit (see Article 21) is reached, etc).

⁴ See Article 5 for the form of costs

⁵ Flat rate : 35% of direct personnel costs (see Article 6.2 point A)

⁶ Not applicable

ANNEX 5

MODEL FOR THE CERTIFICATE ON THE FINANCIAL STATEMENTS

- For options [*in italics in square brackets*]: choose the applicable option. Options not chosen should be deleted.
- For fields in [grey in square brackets]: enter the appropriate data

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TERMS OF REFERENCE FOR AN INDEPENDENT REPORT OF FACTUAL FINDINGS ON COSTS DECLARED UNDER A GRANT AGREEMENT FINANCED UNDER RESEARCH FUND FOR COAL AND STEEL (RFCS) PROGRAMME	2
INDEPENDENT REPORT OF FACTUAL FINDINGS ON COSTS DECLARED UNDER A GRANT AGREEMENT FINANCED UNDER RESEARCH FUND FOR COAL AND STEEL (RFCS) PROGRAMME.....	5

Terms of Reference for an Independent Report of Factual Findings on costs declared under a Grant Agreement financed under the Research Fund for Coal and Steel (RFCS) Programme

This document sets out the ‘**Terms of Reference (ToR)**’ under which

[*OPTION 1: [insert name of the beneficiary] (‘the Beneficiary’)*] [*OPTION 2: [insert name of the linked third party] (‘the Linked Third Party’), third party linked to the Beneficiary [insert name of the beneficiary] (‘the Beneficiary’)*]

agrees to engage

[**insert legal name of the auditor**] (‘the Auditor’)

to produce an independent report of factual findings (‘the Report’) concerning the Financial Statement(s)¹ drawn up by the [*Beneficiary*] [*Linked Third Party*] for the RFCS grant agreement [insert number of the grant agreement, title of the action, acronym and duration from/to] (‘the Agreement’), and

to issue a Certificate on the Financial Statements’ (‘CFS’) referred to in Article 20.3 of the Agreement based on the compulsory reporting template stipulated by the Commission.

The Agreement has been concluded under the **Research Fund for Coal and Steel (RFCS) Programme** between the Beneficiary and *the European Union, represented by the European Commission (‘the Commission’)*.

The Commission is mentioned as a signatory of the Agreement with the Beneficiary only. The European Union is not a party to this engagement.

1.1 Subject of the engagement

The coordinator must submit to the Commission the periodic financial report within 60 days following the end of the reporting period which should include, amongst other documents, a CFS for each beneficiary and for each linked third party that requests a total contribution of EUR 200 000 or more, as reimbursement of actual costs (see Article 20.3 of the Agreement).²

The Beneficiary must submit to the coordinator the CFS for itself and for its linked third party(ies), if the CFS must be included in the periodic financial report according to Article 20.3 of the Agreement.

The CFS is composed of two separate documents:

- The Terms of Reference (‘the ToR’) to be signed by the [*Beneficiary*] [*Linked Third Party*] and the Auditor;
- The Auditor’s Independent Report of Factual Findings (‘the Report’) to be issued on the Auditor’s letterhead, dated, stamped and signed by the Auditor (or the competent public officer) which includes the agreed-upon procedures (‘the Procedures’) to be performed by the Auditor, and the standard factual findings (‘the Findings’) to be confirmed by the Auditor.

¹ By which costs under the Agreement are declared (see template ‘Model Financial Statements’ in Annex 4 to the Grant Agreement).

² a ‘certificate on the financial statements’ is requested, if the (cumulative) amount of payments requested as reimbursement of actual costs (and for which no certificate has yet been submitted) is EUR 200 000 or more and the maximum grant amount indicated, for that beneficiary, in the estimated budget as reimbursement of actual costs is EUR 750 000 or more.

If the CFS must be included in the periodic financial report according to Article 20.3 of the Agreement, the request for payment of the balance relating to the Agreement cannot be made without the CFS. However, the payment for reimbursement of costs covered by the CFS does not preclude the Commission, the European Anti-Fraud Office and the European Court of Auditors from carrying out checks, reviews, audits and investigations in accordance with Article 22 of the Agreement.

1.2 Responsibilities

The *[Beneficiary]* *[Linked Third Party]*:

- must draw up the Financial Statement(s) for the action financed by the Agreement in compliance with the obligations under the Agreement. The Financial Statement(s) must be drawn up according to the *[Beneficiary's]* *[Linked Third Party's]* accounting and book-keeping system and the underlying accounts and records;
- must send the Financial Statement(s) to the Auditor;
- is responsible and liable for the accuracy of the Financial Statement(s);
- is responsible for the completeness and accuracy of the information provided to enable the Auditor to carry out the Procedures. It must provide the Auditor with a written representation letter supporting these statements. The written representation letter must state the period covered by the statements and must be dated;
- accepts that the Auditor cannot carry out the Procedures unless it is given full access to the *[Beneficiary's]* *[Linked Third Party's]* staff and accounting as well as any other relevant records and documentation.

The Auditor:

- *[Option 1 by default: is qualified to carry out statutory audits of accounting documents in accordance with Directive 2006/43/EC of the European Parliament and of the Council of 17 May 2006 on statutory audits of annual accounts and consolidated accounts, amending Council Directives 78/660/EEC and 83/349/EEC and repealing Council Directive 84/253/EEC or similar national regulations].*
- *[Option 2 if the Beneficiary or Linked Third Party has an independent Public Officer: is a competent and independent Public Officer for which the relevant national authorities have established the legal capacity to audit the Beneficiary].*
- *[Option 3 if the Beneficiary or Linked Third Party is an international organisation: is an [internal] [external] auditor in accordance with the internal financial regulations and procedures of the international organisation].*

The Auditor:

- must be independent from the Beneficiary *[and the Linked Third Party]*, in particular, it must not have been involved in preparing the *[Beneficiary's]* *[Linked Third Party's]* Financial Statement(s);
- must plan work so that the Procedures may be carried out and the Findings may be assessed;
- must adhere to the Procedures laid down and the compulsory report format;
- must carry out the engagement in accordance with this ToR;
- must document matters which are important to support the Report;
- must base its Report on the evidence gathered;
- must submit the Report to the *[Beneficiary]* *[Linked Third Party]*.

The Commission sets out the Procedures to be carried out by the Auditor. The Auditor is not responsible for their suitability or pertinence. As this engagement is not an assurance engagement, the Auditor does not provide an audit opinion or a statement of assurance.

1.3 Applicable Standards

The Auditor must comply with these Terms of Reference and with³:

- the International Standard on Related Services ('ISRS') 4400 *Engagements to perform Agreed-upon Procedures regarding Financial Information* as issued by the International Auditing and Assurance Standards Board (IAASB);
- the *Code of Ethics for Professional Accountants* issued by the International Ethics Standards Board for Accountants (IESBA). Although ISRS 4400 states that independence is not a requirement for engagements to carry out agreed-upon procedures, the Commission requires that the Auditor also complies with the Code's independence requirements.

The Auditor's Report must state that there is no conflict of interests in establishing this Report between the Auditor and the Beneficiary [*and the Linked Third Party*], and must specify - if the service is invoiced - the total fee paid to the Auditor for providing the Report.

1.4 Reporting

The Report must be written in the language of the Agreement (see Article 20.7).

Under Article 22 of the Agreement, the Commission, the European Anti-Fraud Office and the Court of Auditors have the right to audit any work that is carried out under the action and for which costs are declared from [*the European Union*] [*Euratom*] budget. This includes work related to this engagement. The Auditor must provide access to all working papers (e.g. recalculation of hourly rates, verification of the time declared for the action) related to this assignment if the Commission, the European Anti-Fraud Office or the European Court of Auditors requests them.

1.5 Timing

The Report must be provided by [dd Month yyyy].

1.6 Other terms

[*The [Beneficiary] [Linked Third Party] and the Auditor can use this section to agree other specific terms, such as the Auditor's fees, liability, applicable law, etc. Those specific terms must not contradict the terms specified above.*]

[legal name of the Auditor]

[name & function of authorised representative]

[dd Month yyyy]

Signature of the Auditor

[legal name of the [Beneficiary][Linked Third Party]]

[name & function of authorised representative]

[dd Month yyyy]

Signature of the [Beneficiary][Linked Third Party]

³ Supreme Audit Institutions applying INTOSAI-standards may carry out the Procedures according to the corresponding International Standards of Supreme Audit Institutions and code of ethics issued by INTOSAI instead of the International Standard on Related Services ('ISRS') 4400 and the Code of Ethics for Professional Accountants issued by the IAASB and the IESBA.

Independent Report of Factual Findings on costs declared under Research Fund for Coal and Steel (RFCS) Programme

(To be printed on the Auditor's letterhead)

To
[name of contact person(s)], [Position]
[[Beneficiary's] [Linked Third Party's] name]
[Address]
[dd Month yyyy]

Dear [Name of contact person(s)],

As agreed under the terms of reference dated [dd Month yyyy]

with [OPTION 1: [insert name of the beneficiary] ('the Beneficiary')] [OPTION 2: [insert name of the linked third party] ('the Linked Third Party'), third party linked to the Beneficiary [insert name of the beneficiary] ('the Beneficiary')],

we
[name of the auditor] ('the Auditor'),
established at
[full address/city/state/province/country],
represented by
[name and function of an authorised representative],

have carried out the procedures agreed with you regarding the costs declared in the Financial Statement(s)⁴ of the [Beneficiary] [Linked Third Party] concerning the grant agreement [insert grant agreement reference: number, title of the action and acronym] ('the Agreement'),

with a total cost declared of
[total amount] EUR,

and a total of actual costs declared of

[sum of total actual costs] EUR

and **hereby provide our Independent Report of Factual Findings ('the Report')** using the compulsory report format agreed with you.

The Report

Our engagement was carried out in accordance with the terms of reference ('the ToR') appended to this Report. The Report includes the agreed-upon procedures ('the Procedures') carried out and the standard factual findings ('the Findings') examined.

The Procedures were carried out solely to assist the Commission in evaluating whether the [Beneficiary's] [Linked Third Party's] costs in the accompanying Financial Statement(s) were

⁴ By which the Beneficiary declares costs under the Agreement (see template 'Model Financial Statement' in Annex 4 to the Agreement).

RFCS MGA — Multi: dd.mm.2015

declared in accordance with the Agreement. The Commission draws its own conclusions from the Report and any additional information it may require.

The scope of the Procedures was defined by the Commission. Therefore, the Auditor is not responsible for their suitability or pertinence. Since the Procedures carried out constitute neither an audit nor a review made in accordance with International Standards on Auditing or International Standards on Review Engagements, the Auditor does not give a statement of assurance on the Financial Statements.

Had the Auditor carried out additional procedures or an audit of the [Beneficiary's] [Linked Third Party's] Financial Statements in accordance with International Standards on Auditing or International Standards on Review Engagements, other matters might have come to its attention and would have been included in the Report.

Not applicable Findings

We examined the Financial Statement(s) stated above and considered the following Findings not applicable:

Explanation (to be removed from the Report):

If a Finding was not applicable, it must be marked as 'N.A.' ('Not applicable') in the corresponding row on the right-hand column of the table and means that the Finding did not have to be corroborated by the Auditor and the related Procedure(s) did not have to be carried out.

The reasons of the non-application of a certain Finding must be obvious i.e.

- i) if no cost was declared under a certain category then the related Finding(s) and Procedure(s) are not applicable;*
- ii) if the condition set to apply certain Procedure(s) are not met the related Finding(s) and those Procedure(s) are not applicable. For instance, for 'beneficiaries with accounts established in a currency other than euro' the Procedure and Finding related to 'beneficiaries with accounts established in euro' are not applicable. Similarly, if no additional remuneration is paid, the related Finding(s) and Procedure(s) for additional remuneration are not applicable.*

List here all Findings considered not applicable for the present engagement and explain the reasons of the non-applicability.

....

Exceptions

Apart from the exceptions listed below, the [Beneficiary] [Linked Third Party] provided the Auditor all the documentation and accounting information needed by the Auditor to carry out the requested Procedures and evaluate the Findings.

Explanation (to be removed from the Report):

- If the Auditor was not able to successfully complete a procedure requested, it must be marked as 'E' ('Exception') in the corresponding row on the right-hand column of the table. The reason such as the inability to reconcile key information or the unavailability of data that prevents the Auditor from carrying out the Procedure must be indicated below.*
- If the Auditor cannot corroborate a standard finding after having carried out the corresponding procedure, it must also be marked as 'E' ('Exception') and, where possible, the reasons why the Finding was not fulfilled and its possible impact must be explained here below.*

List here any exceptions and add any information on the cause and possible consequences of each exception, if known. If the exception is quantifiable, include the corresponding amount.

....

Example (to be removed from the Report):

- 1. The Beneficiary was unable to substantiate the Finding number 1 on ... because*
- 2. After carrying out the agreed procedures to confirm the Finding number 31, the Auditor found a difference of _____ EUR. The difference can be explained by ...*

Further Remarks

In addition to reporting on the results of the specific procedures carried out, the Auditor would like to make the following general remarks:

Example (to be removed from the Report):

1. *Regarding Finding number 8 the conditions for additional remuneration were considered as fulfilled because ...*
2. *In order to be able to confirm the Finding number 15 we carried out the following additional procedures:*

Use of this Report

This Report may be used only for the purpose described in the above objective. It was prepared solely for the confidential use of the [Beneficiary] [Linked Third Party] and the Commission, and only to be submitted to the Commission in connection with the requirements set out in Article 20.3 of the Agreement. The Report may not be used by the [Beneficiary] [Linked Third Party] or by the Commission for any other purpose, nor may it be distributed to any other parties. The Commission may only disclose the Report to authorised parties, in particular to the European Anti-Fraud Office (OLAF) and the European Court of Auditors.

This Report relates only to the Financial Statement(s) submitted to the Commission by the [Beneficiary] [Linked Third Party] for the Agreement. Therefore, it does not extend to any other of the [Beneficiary's] [Linked Third Party's] Financial Statement(s).

There was no conflict of interest⁵ between the Auditor and the Beneficiary [and Linked Third Party] in establishing this Report. The total fee paid to the Auditor for providing the Report was EUR [] (including EUR [] of deductible VAT).

We look forward to discussing our Report with you and would be pleased to provide any further information or assistance.

[legal name of the Auditor]

[name and function of an authorised representative]

[dd Month yyyy]

Signature of the Auditor

⁵ A conflict of interest arises when the Auditor's objectivity to establish the certificate is compromised in fact or in appearance when the Auditor for instance:

- was involved in the preparation of the Financial Statements;
- stands to benefit directly should the certificate be accepted;
- has a close relationship with any person representing the beneficiary;
- is a director, trustee or partner of the beneficiary; or
- is in any other situation that compromises his or her independence or ability to establish the certificate impartially.

Agreed-upon procedures to be performed and standard factual findings to be confirmed by the Auditor

The Commission reserves the right to i) provide the auditor with additional guidance regarding the procedures to be followed or the facts to be ascertained and the way in which to present them (this may include sample coverage and findings) or to ii) change the procedures, by notifying the Beneficiary in writing. The procedures carried out by the auditor to confirm the standard factual finding are listed in the table below.

If this certificate relates to a Linked Third Party, any reference here below to ‘the Beneficiary’ is to be considered as a reference to ‘the Linked Third Party’.

The ‘result’ column has three different options: ‘C’, ‘E’ and ‘N.A.’:

- ‘C’ stands for ‘confirmed’ and means that the auditor can confirm the ‘standard factual finding’ and, therefore, there is no exception to be reported.
- ‘E’ stands for ‘exception’ and means that the Auditor carried out the procedures but cannot confirm the ‘standard factual finding’, or that the Auditor was not able to carry out a specific procedure (e.g. because it was impossible to reconcile key information or data were unavailable),
- ‘N.A.’ stands for ‘not applicable’ and means that the Finding did not have to be examined by the Auditor and the related Procedure(s) did not have to be carried out. The reasons of the non-application of a certain Finding must be obvious i.e. i) if no cost was declared under a certain category then the related Finding(s) and Procedure(s) are not applicable; ii) if the condition set to apply certain Procedure(s) are not met then the related Finding(s) and Procedure(s) are not applicable. For instance, for ‘beneficiaries with accounts established in a currency other than the euro’ the Procedure related to ‘beneficiaries with accounts established in euro’ is not applicable. Similarly, if no additional remuneration is paid, the related Finding(s) and Procedure(s) for additional remuneration are not applicable.

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
A	ACTUAL PERSONNEL COSTS		
	<p>The Auditor draws a sample of persons whose costs were declared in the Financial Statement(s) to carry out the procedures indicated in the consecutive points of this section A.</p> <p><i>(The sample should be selected randomly so that it is representative. Full coverage is required if there are fewer than 10 people (including employees, natural persons working under a direct contract and personnel seconded by a third party), otherwise the sample should have a minimum of 10 people, or 10% of the total, whichever number is the highest)</i></p>		

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	The Auditor sampled [] people out of the total of [] people.		
A.1	<p>PERSONNEL COSTS</p> <p><u>For the persons included in the sample and working under an employment contract or equivalent act (general procedures for individual actual personnel costs)</u></p> <p>To confirm standard factual findings 1-5 listed in the next column, the Auditor reviewed following information/documents provided by the Beneficiary:</p> <ul style="list-style-type: none"> ○ a list of the persons included in the sample indicating the period(s) during which they worked for the action, their position (classification or category) and type of contract; ○ the payslips of the employees included in the sample; ○ reconciliation of the personnel costs declared in the Financial Statement(s) with the accounting system (project accounting and general ledger) and payroll system; ○ information concerning the employment status and employment conditions of personnel included in the sample, in particular their employment contracts or equivalent; ○ the Beneficiary’s usual policy regarding payroll matters (e.g. salary policy, overtime policy, variable pay); ○ applicable national law on taxes, labour and social security and ○ any other document that supports the personnel costs declared. <p>The Auditor also verified the eligibility of all components of the retribution (see Article 6 GA)</p>	<p>1) The employees were i) directly hired by the Beneficiary in accordance with its national legislation, ii) under the Beneficiary’s sole technical supervision and responsibility and iii) remunerated in accordance with the Beneficiary’s usual practices.</p> <p>2) Personnel costs were recorded in the Beneficiary's accounts/payroll system.</p> <p>3) Costs were adequately supported and reconciled with the accounts and payroll records.</p> <p>4) Personnel costs did not contain any ineligible elements.</p>	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	and recalculated the personnel costs for employees included in the sample.	5) There were no discrepancies between the personnel costs charged to the action and the costs recalculated by the Auditor.	
	<p><i>Further procedures if 'additional remuneration' is paid</i></p> <p>To confirm standard factual findings 6-9 listed in the next column, the Auditor:</p> <ul style="list-style-type: none"> ○ reviewed relevant documents provided by the Beneficiary (legal form, legal/statutory obligations, the Beneficiary's usual policy on additional remuneration, criteria used for its calculation...); ○ recalculated the amount of additional remuneration eligible for the action based on the supporting documents received (full-time or part-time work, exclusive or non-exclusive dedication to the action, etc.) to arrive at the applicable FTE/year and pro-rata rate (see data collected in the course of carrying out the procedures under A.2 'Productive hours' and A.4 'Time recording system'). <p><i>IF ANY PART OF THE REMUNERATION PAID TO THE EMPLOYEE IS NOT MANDATORY ACCORDING TO THE NATIONAL LAW OR THE EMPLOYMENT CONTRACT ("ADDITIONAL REMUNERATION") AND IS ELIGIBLE UNDER THE PROVISIONS OF ARTICLE 6.2.A.1, THIS CAN BE CHARGED AS ELIGIBLE COST TO THE ACTION UP TO THE FOLLOWING AMOUNT:</i></p> <p><i>(A) IF THE PERSON WORKS FULL TIME AND EXCLUSIVELY ON THE ACTION DURING THE FULL YEAR: UP TO EUR 8 000/YEAR;</i></p> <p><i>(B) IF THE PERSON WORKS EXCLUSIVELY ON THE ACTION BUT NOT FULL-TIME OR NOT FOR THE FULL YEAR: UP TO THE CORRESPONDING PRO-RATA AMOUNT OF EUR 8 000, OR</i></p> <p><i>(C) IF THE PERSON DOES NOT WORK EXCLUSIVELY ON THE ACTION: UP TO A PRO-RATA AMOUNT</i></p>	6) Not applicable.	
		7) The amount of additional remuneration paid corresponded to the Beneficiary's usual remuneration practices and was consistently paid whenever the same kind of work or expertise was required.	
		8) The criteria used to calculate the additional remuneration were objective and generally applied by the Beneficiary regardless of the source of funding used.	
		9) Not applicable	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	<p><i>CALCULATED IN ACCORDANCE TO ARTICLE 6.2.A.1.</i></p> <ul style="list-style-type: none"> ○ <i>Not Applicable</i> 	<p>10) N/A</p> <p>11) N/A</p> <p>12) N/A.</p> <p>13) N/A</p>	
	<p><u>For natural persons included in the sample and working with the Beneficiary under a direct contract other than an employment contract, such as consultants (no subcontractors).</u></p> <p>To confirm standard factual findings 14-18 listed in the next column the Auditor reviewed following information/documents provided by the Beneficiary:</p> <ul style="list-style-type: none"> ○ the contracts, especially the cost, contract duration, work description, place of work, ownership of the results and reporting obligations to the Beneficiary; ○ the employment conditions of staff in the same category to compare costs and; ○ any other document that supports the costs declared and its registration (e.g. invoices, 	<p>14) The natural persons reported to the Beneficiary (worked under the Beneficiary’s instructions).</p> <p>15) They worked on the Beneficiary’s premises (unless otherwise agreed with the Beneficiary).</p> <p>16) The results of work carried out belong to the Beneficiary.</p>	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	accounting records, etc.).	17) Their costs were not significantly different from those for staff who performed similar tasks under an employment contract with the Beneficiary.	
		18) The costs were supported by audit evidence and registered in the accounts.	
	<p><u>For personnel seconded by a third party and included in the sample (not subcontractors)</u></p> <p>To confirm standard factual findings 19-22 listed in the next column, the Auditor reviewed following information/documents provided by the Beneficiary:</p> <ul style="list-style-type: none"> ○ their secondment contract(s) notably regarding costs, duration, work description, place of work and ownership of the results; ○ any other document that supports the costs declared (e.g. invoices, etc.). 	19) Seconded personnel reported to the Beneficiary and worked on the Beneficiary’s premises (unless otherwise agreed with the Beneficiary).	
		20) The results of work carried out belong to the Beneficiary.	
		<p><i>If personnel is seconded against payment:</i></p> <p>21) The costs declared were supported with documentation and recorded in the Beneficiary’s accounts. The third party did not include any profit.</p>	
		<p><i>If personnel is seconded free of charge:</i></p> <p>22) The costs declared did not</p>	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
		exceed the third party's cost as recorded in the accounts of the third party and were supported with documentation.	
A.2	<p>PRODUCTIVE HOURS</p> <p>To confirm standard factual findings 23-28 listed in the next column, the Auditor reviewed relevant documents, especially national legislation, labour agreements and contracts and time records of the persons included in the sample, to verify that:</p> <ul style="list-style-type: none"> ○ the annual productive hours applied were calculated in accordance with one of the methods described below, ○ the full-time equivalent (FTEs) ratios for employees not working full-time were correctly calculated. <p>If the Beneficiary applied method B, the auditor verified that the correctness in which the total number of hours worked was calculated and that the contracts specified the annual workable hours.</p> <p>If the Beneficiary applied method C, the auditor verified that the ‘annual productive hours’ applied when calculating the hourly rate were equivalent to at least 90 % of the ‘standard annual workable hours’. The Auditor can only do this if the calculation of the standard annual workable hours can be supported by records, such as national legislation, labour agreements, and contracts.</p> <p><i>BENEFICIARY'S PRODUCTIVE HOURS' FOR PERSONS WORKING FULL TIME SHALL BE ONE OF THE FOLLOWING METHODS:</i></p> <p><i>A. 1720 ANNUAL PRODUCTIVE HOURS (PRO-RATA FOR PERSONS NOT WORKING FULL-TIME)</i></p> <p><i>B. THE TOTAL NUMBER OF HOURS WORKED BY THE PERSON FOR THE BENEFICIARY IN THE YEAR</i></p>	<p>23) The Beneficiary applied method [choose one option and delete the others]</p> <p>[A: 1720 hours]</p> <p>[B: the ‘total number of hours worked’]</p> <p>[C: ‘annual productive hours’ used correspond to usual accounting practices]</p> <p>24) Productive hours were calculated annually.</p> <p>25) For employees not working full-time the full-time equivalent (FTE) ratio was correctly applied.</p> <p><i>If the Beneficiary applied method B.</i></p> <p>26) The calculation of the number of ‘annual workable hours’, overtime and absences was verifiable based on the documents provided by the</p>	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	<p><i>(THIS METHOD IS ALSO REFERRED TO AS ‘TOTAL NUMBER OF HOURS WORKED’ IN THE NEXT COLUMN). THE CALCULATION OF THE TOTAL NUMBER OF HOURS WORKED WAS DONE AS FOLLOWS: ANNUAL WORKABLE HOURS OF THE PERSON ACCORDING TO THE EMPLOYMENT CONTRACT, APPLICABLE LABOUR AGREEMENT OR NATIONAL LAW PLUS OVERTIME WORKED MINUS ABSENCES (SUCH AS SICK LEAVE OR SPECIAL LEAVE).</i></p> <p><i>C. THE STANDARD NUMBER OF ANNUAL HOURS GENERALLY APPLIED BY THE BENEFICIARY FOR ITS PERSONNEL IN ACCORDANCE WITH ITS USUAL COST ACCOUNTING PRACTICES (THIS METHOD IS ALSO REFERRED TO AS ‘TOTAL ANNUAL PRODUCTIVE HOURS’ IN THE NEXT COLUMN). THIS NUMBER MUST BE AT LEAST 90% OF THE STANDARD ANNUAL WORKABLE HOURS.</i></p> <p><i>‘ANNUAL WORKABLE HOURS’ MEANS THE PERIOD DURING WHICH THE PERSONNEL MUST BE WORKING, AT THE EMPLOYER’S DISPOSAL AND CARRYING OUT HIS/HER ACTIVITY OR DUTIES UNDER THE EMPLOYMENT CONTRACT, APPLICABLE COLLECTIVE LABOUR AGREEMENT OR NATIONAL WORKING TIME LEGISLATION.</i></p>	Beneficiary.	
		<p><i>If the Beneficiary applied method C.</i></p> <p>27) The calculation of the number of ‘standard annual workable hours’ was verifiable based on the documents provided by the Beneficiary.</p>	
		28) The ‘annual productive hours’ used for calculating the hourly rate were consistent with the usual cost accounting practices of the Beneficiary and were equivalent to at least 90 % of the ‘annual workable hours’.	
A.3	<p>HOURLY PERSONNEL RATES</p> <p><u>For individual hourly rates:</u></p> <p>The Auditor:</p> <ul style="list-style-type: none"> ○ reviewed the documentation provided by the Beneficiary, including manuals and internal guidelines that explain how to calculate hourly rates; ○ recalculated the hourly rates of staff included in the sample following the results of the procedures carried out in A.1 and A.2. 	29) The Beneficiary applied Individual hourly rates were applied	
		30) N/A	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	<p><i><u>HOURLY RATE FOR INDIVIDUAL ACTUAL PERSONAL COSTS:</u></i> <i>IT IS CALCULATED BY DIVIDING THE TOTAL AMOUNT OF PERSONNEL COSTS OF AN EMPLOYEE VERIFIED IN LINE WITH PROCEDURE A.1 BY THE NUMBER OF ANNUAL PRODUCTIVE HOURS VERIFIED IN LINE WITH PROCEDURE A.2.</i></p>	31) N/A	
		32) The individual rates re-calculated by the Auditor were the same as the rates applied by the Beneficiary.	
A.4	<p>TIME RECORDING SYSTEM</p> <p>To verify that the time recording system ensures the fulfilment of all minimum requirements and that the hours declared for the action were correct, accurate and properly authorised and supported by documentation, the Auditor made the following checks for the persons included in the sample that declare time as worked for the action on the basis of time records:</p> <ul style="list-style-type: none"> ○ description of the time recording system provided by the Beneficiary (registration, authorisation, processing in the HR-system); ○ its actual implementation; ○ time records were signed at least monthly by the employees (on paper or electronically) and authorised by the project manager or another manager; ○ the hours declared were worked within the project period; ○ there were no hours declared as worked for the action if HR-records showed absence due to holidays or sickness (further cross-checks with travels are carried out in B.1 below); ○ the hours charged to the action matched those in the time recording system. 	33) All persons recorded their time dedicated to the action on a daily/ weekly/ monthly basis using a paper/computer-based system. <i>(delete the answers that are not applicable)</i>	
		34) Their time-records were authorised at least monthly by the project manager or other superior.	
		35) Hours declared were worked within the project period and were consistent with the presences/absences recorded in HR-records.	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	<p><i>ONLY THE HOURS WORKED ON THE ACTION CAN BE CHARGED. ALL WORKING TIME TO BE CHARGED SHOULD BE RECORDED THROUGHOUT THE DURATION OF THE PROJECT, ADEQUATELY SUPPORTED BY EVIDENCE OF THEIR REALITY AND RELIABILITY (SEE SPECIFIC PROVISIONS BELOW FOR PERSONS WORKING EXCLUSIVELY FOR THE ACTION WITHOUT TIME RECORDS).</i></p>	36) There were no discrepancies between the number of hours charged to the action and the number of hours recorded.	
	<p><u>If the persons are working exclusively for the action and without time records</u></p> <p>For the persons selected that worked exclusively for the action without time records, the Auditor verified evidence available demonstrating that they were in reality exclusively dedicated to the action and that the Beneficiary signed a declaration confirming that they have worked exclusively for the action.</p>	37) The exclusive dedication is supported by a declaration signed by the Beneficiary's and by any other evidence gathered.	
B	COSTS OF SUBCONTRACTING		
B.1	<p>The Auditor obtained the detail/breakdown of subcontracting costs and sampled [redacted] cost items selected randomly (<i>full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is highest</i>).</p> <p>To confirm standard factual findings 38-42 listed in the next column, the Auditor reviewed the following for the items included in the sample:</p> <ul style="list-style-type: none"> ○ the use of subcontractors was foreseen in Annex 1; ○ subcontracting costs were declared in the subcontracting category of the Financial Statement; ○ supporting documents on the selection and award procedure were followed; ○ the Beneficiary ensured best value for money (key elements to appreciate the respect of this principle are the award of the subcontract to the bid offering best price-quality ratio, under conditions of transparency and equal treatment. In case an existing framework 	<p>38) The use of claimed subcontracting costs was foreseen in Annex 1 and costs were declared in the Financial Statements under the subcontracting category.</p> <p>39) There were documents of requests to different providers, different offers and assessment of the offers before selection of the provider in line with internal procedures and procurement rules. Subcontracts were awarded in accordance with the principle</p>	

Ref	Procedures	Standard factual finding	Result (C / E / N.A.)
	<p>contract was used the Beneficiary ensured it was established on the basis of the principle of best value for money under conditions of transparency and equal treatment).</p> <p>In particular,</p> <ul style="list-style-type: none"> i. if the Beneficiary acted as a contracting authority within the meaning of Directive 2004/18/EC or of Directive 2004/17/EC, the Auditor verified that the applicable national law on public procurement was followed and that the subcontracting complied with the Terms and Conditions of the Agreement. ii. if the Beneficiary did not fall under the above-mentioned category the Auditor verified that the Beneficiary followed their usual procurement rules and respected the Terms and Conditions of the Agreement. <p>For the items included in the sample the Auditor also verified that:</p> <ul style="list-style-type: none"> o the subcontracts were not awarded to other Beneficiaries in the consortium; o there were signed agreements between the Beneficiary and the subcontractor; o there was evidence that the services were provided by subcontractor; 	<p>of best value for money.</p> <p><i>(When different offers were not collected the Auditor explains the reasons provided by the Beneficiary under the caption “Exceptions” of the Report. The Commission will analyse this information to evaluate whether these costs might be accepted as eligible)</i></p>	
		40) The subcontracts were not awarded to other Beneficiaries of the consortium.	
		41) All subcontracts were supported by signed agreements between the Beneficiary and the subcontractor.	
		42) There was evidence that the services were provided by the subcontractors.	
C	COSTS OF PROVIDING FINANCIAL SUPPORT TO THIRD PARTIES		
C.1	Not applicable .	43) N/A	

D	OTHER ACTUAL DIRECT COSTS		
D.1	Not applicable	44) N/A	
		45) N/A	
		46) N/A	
		47) N/A	
D.2	<p>DEPRECIATION COSTS FOR EQUIPMENT, INFRASTRUCTURE OR OTHER ASSETS</p> <p>The Auditor sampled [redacted] cost items selected randomly <i>(full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is the highest).</i></p> <p>For “equipment, infrastructure or other assets” [from now on called “asset(s)”] selected in the sample the Auditor verified that:</p> <ul style="list-style-type: none"> ○ the assets were acquired in conformity with the Beneficiary's internal guidelines and procedures; ○ they were correctly allocated to the action (with supporting documents such as delivery note invoice or any other proof demonstrating the link to the action) ○ they were entered in the accounting system; ○ the extent to which the assets were used for the action (as a percentage) was supported by reliable documentation (e.g. usage overview table); <p>The Auditor recalculated the depreciation costs and verified that they were in line with the applicable rules in the Beneficiary’s country and with the Beneficiary’s usual accounting policy (e.g. depreciation calculated on the acquisition value).</p>	48) Procurement rules, principles and guides were followed.	
		49) There was a link between the grant agreement and the asset charged to the action.	
		50) The asset charged to the action was traceable to the accounting records and the underlying documents.	
		51) The depreciation method used to charge the asset to the action was in line with the applicable rules of the Beneficiary's country and the Beneficiary's usual accounting policy.	
		52) The amount charged corresponded to the actual usage for the action.	

	The Auditor verified that no ineligible costs such as deductible VAT, exchange rate losses, excessive or reckless expenditure were declared (see Article 6.5 GA).	53) No ineligible costs or excessive or reckless expenditure were declared.	
D.3	<p>OPERATING COSTS</p> <p>The Auditor sampled [redacted] cost items selected randomly (<i>full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is highest</i>).</p> <p>For the purchase of goods, works or services included in the sample the Auditor verified that:</p> <ul style="list-style-type: none"> ○ the contracts did not cover tasks described in Annex 1; ○ they were correctly identified, allocated to the proper action, entered in the accounting system (traceable to underlying documents such as purchase orders, invoices and accounting); ○ the goods were not placed in the inventory of durable equipment; ○ the costs charged to the action were accounted in line with the Beneficiary's usual accounting practices; ○ no ineligible costs or excessive or reckless expenditure were declared (see Article 6 GA). <p>In addition, the Auditor verified that these goods and services were acquired in conformity with the Beneficiary's internal guidelines and procedures, in particular:</p> <ul style="list-style-type: none"> ○ if Beneficiary acted as a contracting authority within the meaning of Directive 2004/18/EC or of Directive 2004/17/EC, the Auditor verified that the applicable national law on public procurement was followed and that the procurement contract complied with the Terms and Conditions of the Agreement. ○ if the Beneficiary did not fall into the category above, the Auditor verified that the Beneficiary followed their usual procurement rules and respected the Terms and Conditions of the Agreement. <p>For the items included in the sample the Auditor also verified that:</p> <ul style="list-style-type: none"> ○ the Beneficiary ensured best value for money (key elements to appreciate the respect of this principle are the award of the contract to the bid offering best price-quality ratio, 	54) Contracts for works or services did not cover tasks described in Annex 1.	
		55) Costs were allocated to the correct action and the goods were not placed in the inventory of durable equipment.	
		56) The costs were charged in line with the Beneficiary's accounting policy and were adequately supported.	
		57) No ineligible costs or excessive or reckless expenditure were declared. For internal invoices/charges only the cost element was charged, without any mark-ups.	
		58) Procurement rules, principles and guides were followed. There were documents of requests to different providers, different offers and assessment of the offers before selection of the provider in line with internal procedures and procurement rules. The purchases were made in	

	<p>under conditions of transparency and equal treatment. In case an existing framework contract was used the Auditor also verified that the Beneficiary ensured it was established on the basis of the principle of best value for money under conditions of transparency and equal treatment);</p> <p><i>SUCH GOODS AND SERVICES INCLUDE, FOR INSTANCE, CONSUMABLES AND SUPPLIES, DISSEMINATION (INCLUDING OPEN ACCESS), PROTECTION OF RESULTS, SPECIFIC EVALUATION OF THE ACTION IF IT IS REQUIRED BY THE AGREEMENT, CERTIFICATES ON THE FINANCIAL STATEMENTS IF THEY ARE REQUIRED BY THE AGREEMENT AND CERTIFICATES ON THE METHODOLOGY, TRANSLATIONS, REPRODUCTION.</i></p>	<p>accordance with the principle of best value for money.</p> <p><i>(When different offers were not collected the Auditor explains the reasons provided by the Beneficiary under the caption “Exceptions” of the Report. The Commission will analyse this information to evaluate whether these costs might be accepted as eligible)</i></p>	
D.4	Not applicable	59) N/A	
		60) N/A	
		61) N/A	
E	USE OF EXCHANGE RATES		
E.1	<p>a) For Beneficiaries with accounts established in a currency other than euros</p> <p>The Auditor sampled [redacted] cost items selected randomly and verified that the exchange rates used for converting other currencies into euros were in accordance with the following rules established in the Agreement (full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is highest):</p>	62) The exchange rates used to convert other currencies into Euros were in accordance with the rules established of the Grant Agreement and there was no difference in the final figures.	

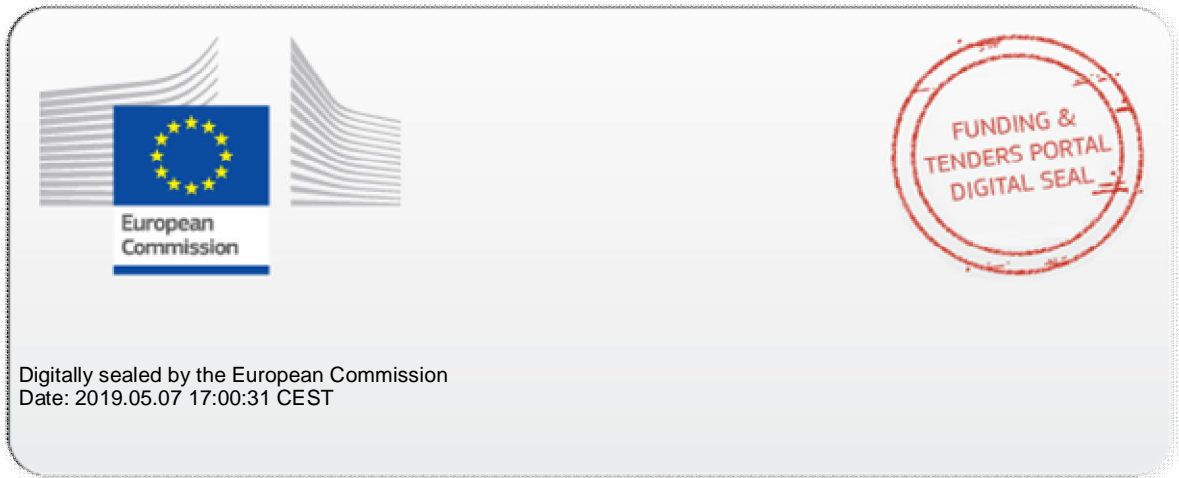
	<p><i>COSTS INCURRED IN ANOTHER CURRENCY SHALL BE CONVERTED INTO EURO AT THE AVERAGE OF THE DAILY EXCHANGE RATES PUBLISHED IN THE C SERIES OF OFFICIAL JOURNAL OF THE EUROPEAN UNION (https://www.ecb.int/stats/exchange/eurofxref/html/index.en.html), DETERMINED OVER THE CORRESPONDING REPORTING PERIOD.</i></p> <p><i>IF NO DAILY EURO EXCHANGE RATE IS PUBLISHED IN THE OFFICIAL JOURNAL OF THE EUROPEAN UNION FOR THE CURRENCY IN QUESTION, CONVERSION SHALL BE MADE AT THE AVERAGE OF THE MONTHLY ACCOUNTING RATES ESTABLISHED BY THE COMMISSION AND PUBLISHED ON ITS WEBSITE (http://ec.europa.eu/budget/contracts_grants/info_contracts/inforeuro/inforeuro_en.cfm), DETERMINED OVER THE CORRESPONDING REPORTING PERIOD.</i></p>		
	<p>b) For Beneficiaries with accounts established in euros</p> <p>The Auditor sampled [redacted] cost items selected randomly and verified that the exchange rates used for converting other currencies into euros were in accordance with the following rules established in the Agreement (full coverage is required if there are fewer than 10 items, otherwise the sample should have a minimum of 10 item, or 10% of the total, whichever number is highest):</p> <p><i>COSTS INCURRED IN ANOTHER CURRENCY SHALL BE CONVERTED INTO EURO BY APPLYING THE BENEFICIARY'S USUAL ACCOUNTING PRACTICES.</i></p>	<p>63) The Beneficiary applied its usual accounting practices.</p>	

[legal name of the audit firm]

[name and function of an authorised representative]

[dd Month yyyy]

<Signature of the Auditor



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