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Second interim report and recommendations on the optimisation of SET Plan related EERA resources

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DISCLAIMER

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EXECUTIVE SUMMARY

This report D1.9. – “Second interim report and recommendations on the optimisation of SET Plan related EERA resources” – relates to task 1.2. – “Identification and mapping of EERA resources” – of the SUPEERA project. This Report will be updated once more and realised in its final version at the end of the project.

As D1.4. “Interim report and recommendations on the optimisation of SET Plan related EERA resources” was intended to produce a preliminary analysis of EERA resources supporting the implementation of the SET Plan Implementation Plans (IPs) in terms of 1) the public institutional and competitive funding and 2) the appropriate EERA human resources and infrastructures, D1.9. aims at enriching D1.4.’s first analysis with some more and updated input.

In line with the methodology used a year prior, the sources of information used for D1.9.’s analysis are: 1) deliverable D1.4., which provided a first data collection and analysis of EERA members resources supporting the implementation of the SET Plan IPs; 2) deliverable D1.2. – “Second interim report on the state of play of the SET Plan IPs and mapping of R&I activities”, built on the SET Plan annual progress report of 2020[1], and which provided information on the state of play of the IPs and their activities, with a focus on “orange” and “red” activities (respectively, activities with a lack or no project to take-off); and 3) a comprehensive survey addressed to EERA members within its Joint Programmes, regarding their organisations’ resources available to cover identified IPs activities.

Based on this second data collection and analysis, D1.9. updates T1.2.’s preliminary conclusions and recommendations, and further the analysis conducted a year prior on EERA members ongoing and potential contributions to facilitate the implementation of the SET Plan IPs.

[1] Strategic Energy Technologies Information System (SETIS), Implementing the SET Plan: Making the SET Plan fit for the EU Green recovery, Nov. 2020, https://setis.ec.europa.eu/progress-implementation-working-groups-2020_en

LIST OF ACRONYMS

CCUS	Carbon Capture Use and Storage
CET	Clean Energy Transition
CSP	Concentrated Solar Power
EC	European Commission
EE	Energy Efficiency
EERA	European Energy Research Alliance
EGD	European Green Deal
ETIP(s)	European Technology and Innovation Platform(s)
EU	European Union
HE	Human Efforts
HR	Human Resources
IP(s)	Implementation Plan(s)
IWG(s)	Implementation Working Group(s)
JP(s)	Joint Programme(s)
JP Bio	Joint Programme on Bioenergy
JP CCS	Joint Programme on Carbon Capture and Storage
JP CSP	Joint Programme on Concentrated Solar Power
JP E3S	Joint Programme on Economic, Environmental and Social Impacts of the Energy Transition
JP EEIP	Joint Programme on Energy Efficiency in Industrial Processes
JP ESI	Joint Programme on Energy Systems Integration
JP FCH	Joint Programme on Fuel Cells and Hydrogen
JP GEO	Joint Programme on Geothermal
JP PV	Joint Programme on Photovoltaic Solar Energy
JP SC	Joint Programme on Smart Cities
JP SG	Joint Programme on Smart Grids
MS	Member States
NS	Not Specified
PED	Positive Energy Districts
PM	Person-Months
PV	Photovoltaics
R&I	Research and Innovation
RTO(s)	Research and Technology Organisation(s)

SETIS	Strategy Energy Technology Plan Information System
SET Plan	Strategy Energy Technology Plan
SI(s)	Supporting Initiative(s) to the IWG
SRIA(s)	Strategic Research and Innovation Agenda(s)
SUPEERA	Support to the coordination of national research and innovation programmes in areas of activities of the European Energy Research Alliance
FTE	Full Time Equivalent
WP(s)	Work Package(s)

LIST OF TABLES AND CHARTS

I. INTRODUCTION

While the urgency of global warming and the fight against the effects of climate change is growing, governments worldwide have particularly strengthened their pledges towards climate neutrality. Whether looking at the European climate law, the Fit for 55 package, or COP26's conclusions and results, all of those initiatives show us that global leaders and societies have taken up the challenges at stake.

The engagement of the clean energy sector, and most especially of the energy research community, is of paramount importance. In the EU, the European Commission indeed estimates that energy activities are responsible for around 75% of carbon emissions; and have emphasised on many occasions Europe's reliability on emerging or breakthrough carbon-neutral technologies in order to limit the Earth's climate warming to exceed 1.5°C. In that perspective, achieving climate neutrality and 2030 & 2050 objectives will strongly depend on a continuous synchronisation and coordination of our energy research objectives, priorities, projects and results, at the larger scale possible.

In this context, the contribution from the EERA community to ensure the transition seems particularly topical. Since the very inception of the SET Plan, EERA members have indeed been acting as the research pillar of the SET Plan, and as such, have precisely contributed to strengthening and coordinating energy R&I policies at the EU level. Moreover, EERA and its Linked Third Parties, through the SUPEERA project, continue to play a crucial role in facilitating the coordination of the research community, especially when realising two of its activities: building a consolidated overview of the SET Plan activities' implementation, on the one hand; and on the other hand, inventorying EERA members' ongoing and potential contributions to the execution of those activities.

While the former mainly relies on SETIS' yearly progress assessment reports, to which SUPEERA partners make sure EERA members can add their contributions and feedback; the latter entails a comprehensive mapping process conducted among JP coordinators and their members on an annual basis in order to allow the optimisation of EERA resources to facilitate the execution of the SET Plan IPs. The overall goal of both activities is to have the most accurate and complete overview of IP's most lagging activities, and from there, to facilitate the execution of the SET Plan itself.

In line with these stated objectives and general mission, this second interim report aims at providing a mapping of EERA human resources, research infrastructures and competitive and institutional funding, supporting the execution of the SET Plan IPs activities.

Therefore, two years after the launch of SUPEERA, this report provides an updated state of play of the European, trans-national, national and regional funding made available and reported by EERA members supporting the SET Plan's "red" and "orange" activities; and also displays EERA members' human resources in terms of PM (Person Months) and infrastructures (laboratories, instruments, test sites, virtual facilities, etc.), which can be mobilised in order to reach the SET Plan's priorities. This analysis intends to assist the EERA Joint Programmes Coordinators in optimising the reported respective members' resources to match them eventually with the needs of identified Implementation Plans activities.

Alongside the Joint Programme Coordinators, the report will be transmitted to the EERA Executive Committee as input for the elaboration of its strategy, as well as EERA members sitting in the Implementation Working Groups as initial suggestions for their further actions.

The Report's functional role will be fully accomplished at the very end of the SUPEERA project, when issued in its final updated version. It shall produce a set of recommendations aimed at optimising energy research resources dedicated to the execution of the SET Plan, and eventually maximise EERA members' synergies.

II. METHODOLOGY

For this report, and in the second year of the execution of the T1.2., the initial two-fold methodology deployed in Y1 was slightly adjusted.

Firstly, the survey used a year prior to gather homogenous information from EERA members (see Annex 1) was adjusted to Y2's objectives. Like in Y1, T1.2.'s survey has been conceived in a way to gather two main types of information: 1) organisations' human resources and infrastructures, and 2) organisations' public institutional and competitive funding in the areas of activity of the SET Plan Implementation Plans. One version of this survey was tailored for each IP and pre-filled with IP's activities. Furthermore, based on T1.1. and the strategy defined between both the European Commission and the SUPEERA partners for the second year of the project, only those activities that were qualified as "orange" and "red" during SETIS' analysis of the SET Plan IPs' implementation progress were selected and pre-filled in the survey.

Secondly, once tailored, all the surveys were sent to JP coordinators, soliciting them to mobilise and involve respective members in filling in the surveys according to their field of expertise. Contacted members have sent their replies to the partners between June and November 2021, directly by email. To increase the number of surveys, several targeted phone reminders from the EERA Secretariat were carried out.

There must be stressed that there is no complete correspondence between EERA Joint Programmes and SET Plan Implementation Plans. Therefore, pre-filled surveys with IPs information were sent to JPs, as follows:

Implementation plan (IP)	Corresponding EERA Joint programme (JP)
Concentrated solar power	Concentrated solar power
Photovoltaics	Photovoltaic solar energy
Deep geothermal	Geothermal
Offshore wind	Wind energy
Ocean energy	Ocean energy
Positive energy districts	Smart cities
Energy efficiency solutions in buildings	Smart cities
Energy efficiency in industry	Energy efficiency in industrial processes
Batteries	Energy storage
Renewable fuels and bioenergy	Bioenergy
Carbon capture utilisation and storage	Carbon capture utilisation and storage

Table 1. Correspondence used for SUPEERA's T1.2. survey between IPs and EERA JPs

Eventually, the data provided by JP members were analysed, alongside the data extracted from a projects catalogue elaborated by EERA Bioenergy JP, and compared with answers already received during SUPEERA's first year, as well as with the data provided by IWGs for SETIS' 2020 progress report. Projects reported as addressing several activities were counted several times, but their resources were split proportionally between projects, in order to have the most accurate overview of EERA members' resources.

After displaying general data on undertaken activities, this report examines how EERA members, with their respective human resources, infrastructures, public institutional and competitive funding, can play a role in facilitating the execution of the SET Plan priorities.

III. UPDATED FINDINGS ON EERA MEMBER'S CONTRIBUTION TO THE IMPLEMENTATION OF THE SET PLAN PRIORITIES

In order to update T1.2.'s preliminary mapping of the available resources of EERA members and align them with the needs of the SET Plan IPs priorities, with an exclusive focus on those activities that need further assistance to take-off according to SETIS' 2020 progress report (i.e. "red" and "orange" activities), T1.2.'s survey was sent again to EERA JP members.

As previously stated in the methodology presentation, the identification and mapping of EERA resources covered two directions:

1) Ongoing projects addressing the SET Plan IPs' "red" and "orange" activities, with their corresponding funding (either European, national, regional or transnational), and the human resources mobilised for their realisation;
2) Available infrastructures (either laboratories, test sites, instruments or virtual facilities) and institutional funding to the execution of "red" and "orange" activities of the SET Plan's IPs.

The survey was sent to the EERA JP Coordinators, who themselves mobilised their JP members. Overall, 36 filled-in surveys were received between June and November 2021. According to Figure 1, the highest number of replies was received from EERA JP Energy Storage, with 12 responses, followed by EERA JP Bioenergy, with 9 answers, and EERA JP Wind energy, with 5 replies.

As for EERA JP Concentrated Solar Power (CSP), there was only one activity labelled as "red" in SETIS' progress assessment, i.e. Activity 9: *Development of supercritical steam turbines optimised for the specifics of CSP applications*. According to the JP coordinator, this activity has not been considered a priority for EERA JP CSP members since their regular research activities are unrelated to the turbine or power block topics. Therefore, this EERA JP is not supporting its execution. In addition, this activity was ranked ninth (low priority) in the IP of the CSP/STE SET Plan and although various turbine manufacturers showed interest in developing the items included in this R&I activity, the lack of public funding has been a significant barrier to enable the cooperation and technical progress.

This section thus contains a general overview of the data regarding 11 IPs' "red" and "orange" activities. Among them, three IPs were selected for a more detailed analysis, considering the high response rate received from EERA JP members. This year's analysis was based on this year's input, as well as the previous year's, and the raw data received from IWGs by SETIS during its 2020 progress assessment, in order to set up the most accurate and complete overview of the status of EERA member's efforts and resources dedicated to the execution of those activities of the SET Plan IPs, which need more assistance to take-off.

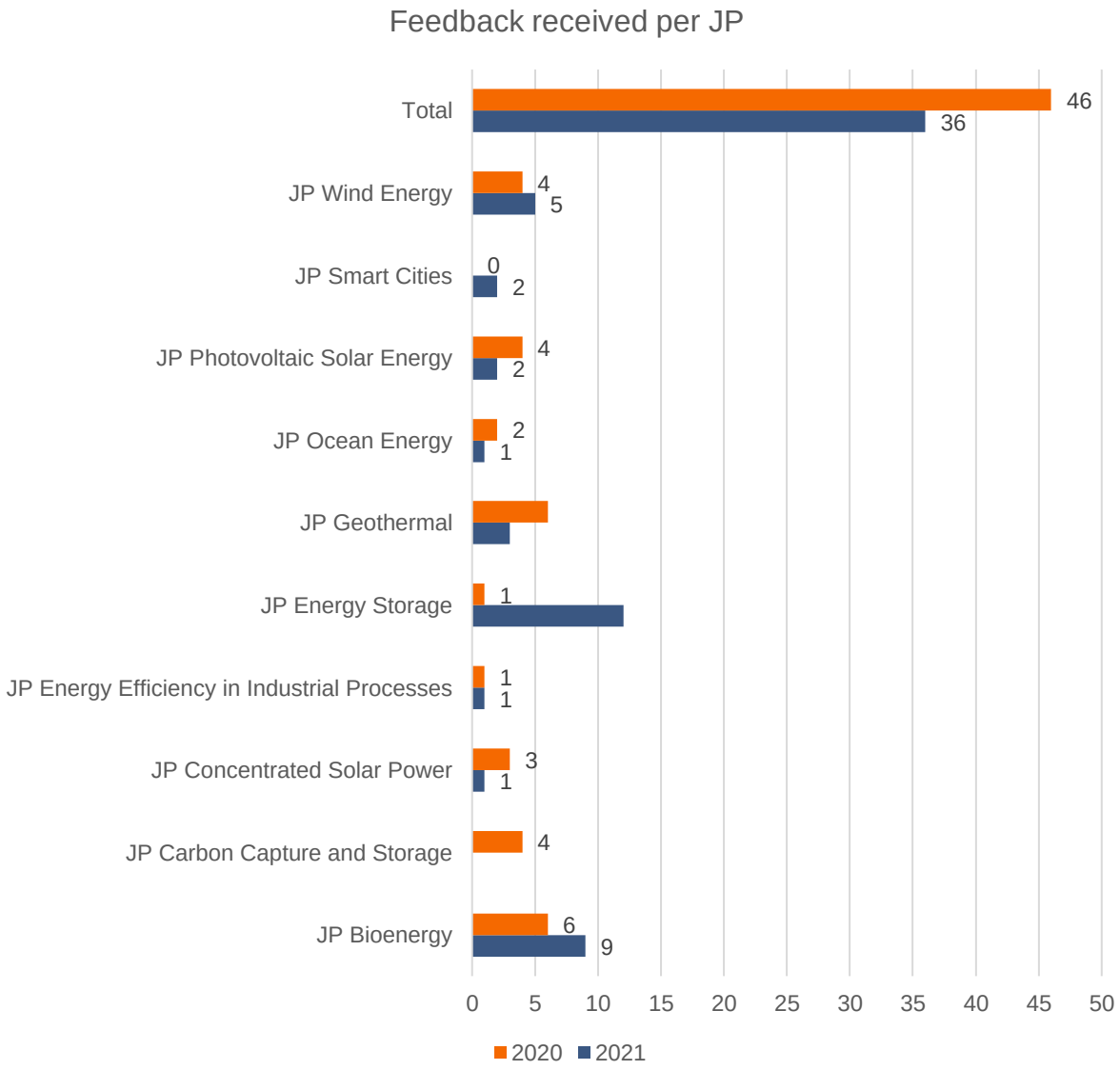


Figure 1. Number of feedbacks received per mobilised JP

3.1. REPORTED PROJECTS

Reporting on EERA JP members' ongoing projects has allowed getting a first sense of the dynamic of the SET Plan R&I activities, especially those reported by EERA JP members to SETIS as "lagging behind".

With 177 more projects reported by EERA members during this second edition of the survey, 436 ongoing projects were thus attributed in total to "red" and "orange" IPs activities. As stated in the Methodology section, projects which were addressing several IPs' activities have been counted several times, and their resources, split proportionally in-between related projects.

IP	Activity *Red ● / Orange ● according to SETIS' 2020 SET Plan implementation progress report*	Number of projects reported (2020)	Number of projects reported (2021)	Total of ongoing projects
CSP	● Activity 9: Development of supercritical steam turbines optimised for the specifics of CSP applications[2]	3	**0**	3
PV	● Activity 6: Cross-sectoral research at lower TRL	5	**12**	17
GEO	● Activity 5: Exploration techniques (including resource prediction and exploratory drilling)	28	**5**	33
	● Activity 7: Integration of geothermal heat and power in the energy system and grid flexibility	6	**2**	8
	● Activity 8: Zero emissions power plants	7	**0**	7
WIND	● Activity 1: System Integration	3	**8**	11
	● Activity 5: Wind Energy Industrialisation	2	**18**	20
	● Activity 8: Ecosystem and social impact	5	**3**	8
	● Activity 9: Human Capital Agenda	1	**2**	3
OCEAN	● Activity 1.5: Installation, logistics and infrastructure	0	**0**	0
	● Activity 2.2: Creation of an EU insurance and guarantee fund to underwrite various project risks	0	**1**	1
	● Activity 3.1: Development of certification and standards to support the offshore renewable technology sector	0	**0**	0
	● Activity 3.2: De-risking environmental consenting through an integrated programme of measures	0	**0**	0
PED	● Activity 3: PED Guides and Tools	55	**0**	55
	● Activity 4: PED Replication and Mainstreaming	55	**2**	57
EE FOR BUILDINGS	● Activity 4: Living labs - Energy technologies and solutions for decarbonised European quarters and Cities	18	**3**	21

[2] Not considered as a priority activity by the EERA JP CSP membership

	Activity 7: Cost reduction and increase in efficiency of micro CHP/CCHP	4	**4**	8
EE IN INDUSTRY	Activity 1.3: Top Gas Recycling – Blast Furnace (TGR-BF) using plasma torch	0	**0**	0
	Activity 3.4: Polygeneration (heat, cold, electrical power) and hybrid plants	5	**6**	11
	Activity 4.2: Non-conventional energy sources in process industry	0	**0**	0
BATTERIES	Activity 1.3: Advancement of batteries for stationary energy storage	6	**4**	10
	Activity 1.4: Post-Li ion for e-mobility	8	**8**	16
	Activity 2.1: Foster development of materials processing techniques and components for fast industrialisation compatible with present mass production lines	9	**5**	14
	Activity 2.2: Foster development of cell and battery manufacturing equipment	6	**5**	11
	Activity 3.1: Hybridation of battery systems for stationary energy storage (ESS)	4	**6**	10
BIO	Activity 2: Demonstrate advanced liquid and gaseous biofuels through biochemical / thermochemical/ chemical conversion from sustainable biomass and/or from autotrophic microorganisms and primary renewable energy	11	**24**	35
	Activity 3: Scale-up advanced liquid and gaseous biofuels through biochemical / thermochemical/ chemical conversion from sustainable biomass and/or from autotrophic microorganisms and primary renewable energy	13	**9**	22
	Activity 5: Demonstrate other renewable liquid and gaseous fuels (excluding hydrogen) through thermochemical/ chemical/ biochemical/electrochemical transformation of energy neutral carriers with renewable energy	0	**16**	16
	Activity 6: Scale-up other renewable liquid and gaseous fuels (excluding hydrogen) through thermochemical/ chemical/ biochemical/electrochemical transformation of energy neutral carriers with renewable energy	0	**10**	10

	● Activity 8: Develop high efficiency large scale biomass cogeneration of heat and power	0	**13**	13
	● Activity 10: Scale-up high efficiency large scale biomass cogeneration of heat and power	0	**3**	3
	● Activity 12: Demonstrate solid, liquid and gaseous intermediate bioenergy carriers through biochemical / thermochemical/ chemical conversion from sustainable biomass	0	**8**	8
	● Activity 13: Scale-up solid, liquid and gaseous intermediate bioenergy carriers through biochemical / thermochemical/ chemical conversion from sustainable biomass	0	**0**	0
CCUS	● Activity 1: Delivery of a whole chain CCS project operating in the power sector	4	**0**	4
	● Activity 4: Establish a European CO2 Storage Atlas	0	**0**	0
	● Activity 5: Unlocking European Storage capacity	1	**0**	1
	Total	259	**177**	436

Table 2. Number of projects reported per IP and per "red" and "orange" activity

While Table 2 displays the total number of projects reported per IP and per "red" and "orange" activity by EERA JP members, Table 3 shows how, among those projects, around a third are actually aimed at the SET Plan IPs' "red" activities. Moreover, the number of activities for which no projects were reported by EERA members accounts for only 7 over a total of 36 "red" and "orange" activities (i.e. Activities 1.5, 3.1, 3.2 of the Ocean energy IP; Activities 1.3, 4.2 of the Energy efficiency in industry IP; Activity 13 of the Renewable fuels and bioenergy IP; and Activity 4 of the CCUS IP). On the other hand, while there were projects reported for the Geothermal IP's Activity 8 and the PED IP's Activity 3 in 2020, no new projects were identified.

Activity colour	Number of activities	Number of activities with 0 project	Total number of projects reported (2020-21)
Red	14	**5**	144
Orange	22	**2**	292
Total	**36**	**7**	**436**

Table 3. Number of projects reported per activity colour

3.2. COMPETITIVE FUNDING

Like in Y1, competitive funding, i.e., public funding allocated through competitive programmes and calls by public funding bodies, forms the most of the contribution of EERA members (and other relevant stakeholders) to the activities of the Implementation Plans, even when looking more specifically at "red" and "orange" activities. €5066 million funding issued from competitive sources is indeed dedicated to the 436 projects reported in total by EERA JP members since the inception of SUPEERA, considering the contributions by all the stakeholders involved in the project consortia, including also non-EERA members. As displayed in Figure 3, these funds are distributed between European funds (either from Horizon 2020 or other EU funds), national/regional funds, transnational funds, and other types of funding.

Figure 2 shows the total amount of competitive funding received for all the projects reported by EERA JP members supporting IPs' "red" and "orange" activities, during the first and the second year of the SUPEERA project. As such, it brings to light how the IP on Positive energy districts received by far the most competitive funding, with €3,764 million, most of it having been reported during the first year of SUPEERA. It is followed by the IP on Renewable fuels and bioenergy, which received €381 million, most of it having been reported during the second year of SUPEERA; the IP on Batteries, which received a total of €337 million of funding, two-thirds of it having been reported during the first year of SUPEERA; and by the IP on Geothermal, which received €286 million of competitive funding, most of it reported during the first year of SUPEERA.

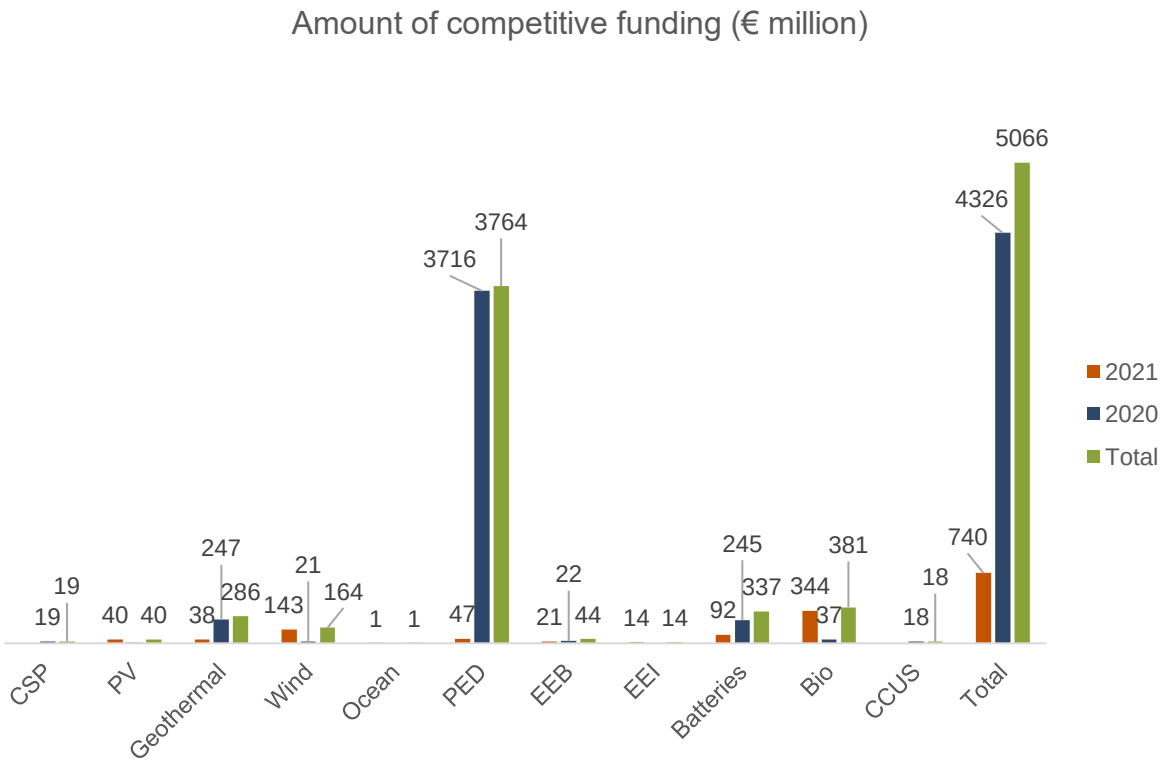


Figure 2. Volume of competitive funding reported by EERA members as supporting IPs' "red" and "orange" activities

As illustrated in Figure 3, and contrary to the first preliminary set of findings of this task of SUPEERA, National and regional funding are reported as the most important funding sources for the projects listed by EERA members, accounting for around 80% of the total reported competitive funding. European funding (i.e. Horizon 2020 programme as well as other types of EU funds) then accounts for less than 20% of the total competitive funding.

Yet, this repartition is clearly due to PED's, whereas most projects reported and covering the other IPs' "red" and "orange" activities are funded exclusively from, either only European funds (i.e., the CSP and Ocean IPs), or exclusively by European, National and Regional funding sources altogether (i.e., the CCUS, Renewable fuels and bioenergy, Batteries, EEI, PED, Wind, PV IPs). Moreover, only the Geothermal and the EEB IPs seem to benefit from Transnational funds (i.e., Interreg funds).

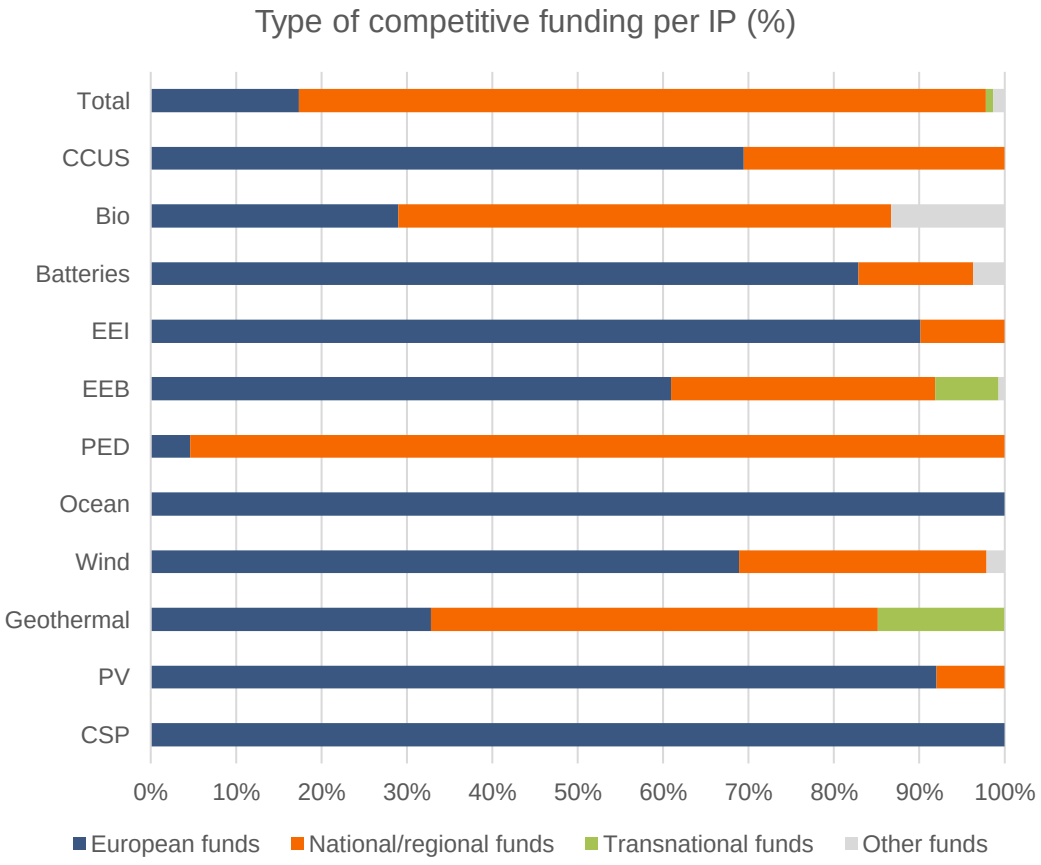


Figure 3. Type of competitive funding reported by EERA members as available to address "red" and "orange" activities of the SET Plan IPs per IP between 2020 and 2021

Furthermore, as displayed in Figure 4, the share of this competitive funding received by EERA members and contributing to "red" and "orange" activities of the IPs, amounts to approximatively 3% of the total contribution received by all stakeholders involved in the reported projects.

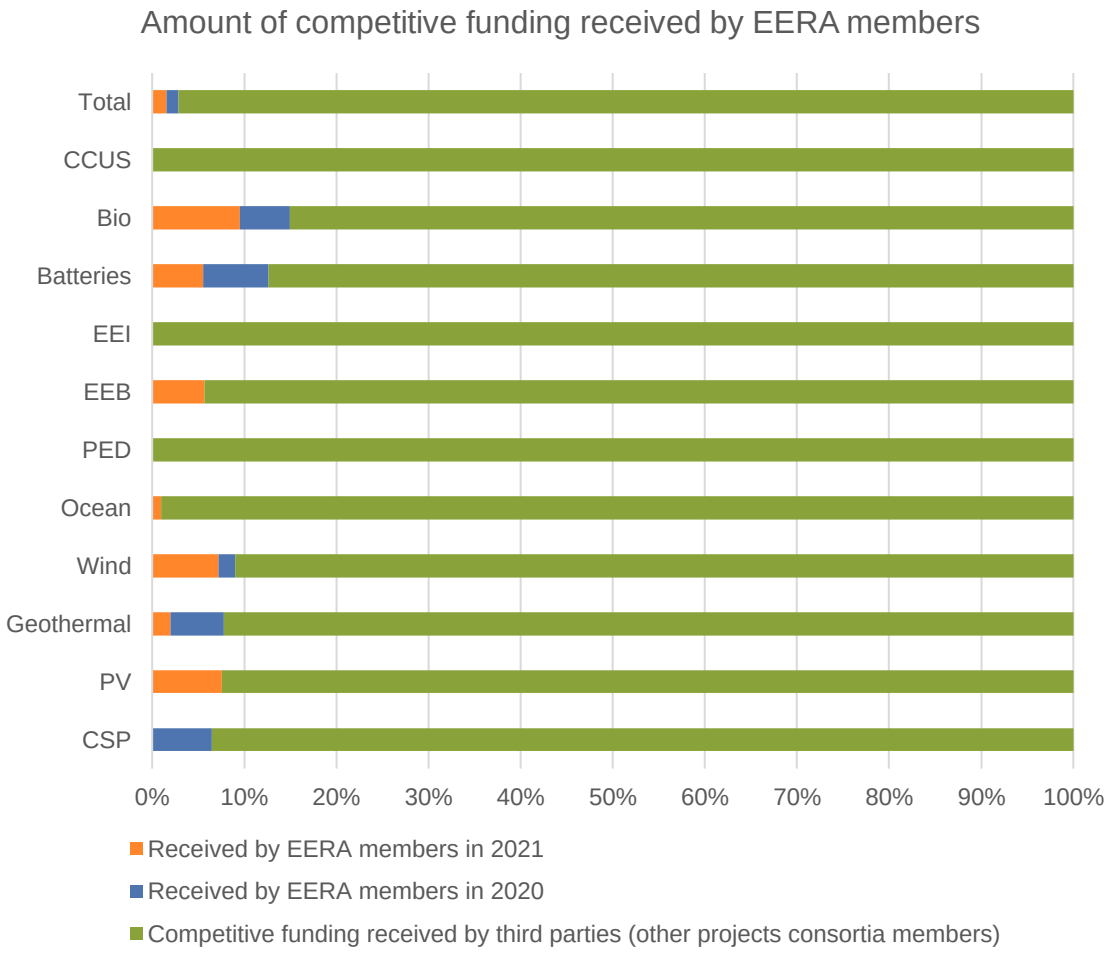


Figure 4. Share of the competitive funding received by EERA members available to address the SET Plan IPs' "red" and "orange" activities

3.3. INSTITUTIONAL FUNDING

The second type of funding analysed was institutional funding, i.e., own resources at the disposal of the organisations or directly received from a governmental body (e.g., ministries, funding agencies, etc.), potentially also deployable to cover the SET Plan IPs "red" and "orange" activities and allocated without any competitive process. As shown in Figure 5, around 43% of the budget received by EERA members is institutional funding, amounting to €113 million since SUPEERA's inception. The highest amount of institutional funding and reported by EERA JP members is allocated to the Wind IP, with €52 million funding reported towards this sector, followed by the Renewable fuels and bioenergy IP, which benefits from €32 million funding through institutional sources, and by the Batteries IP, which receive €19 million.

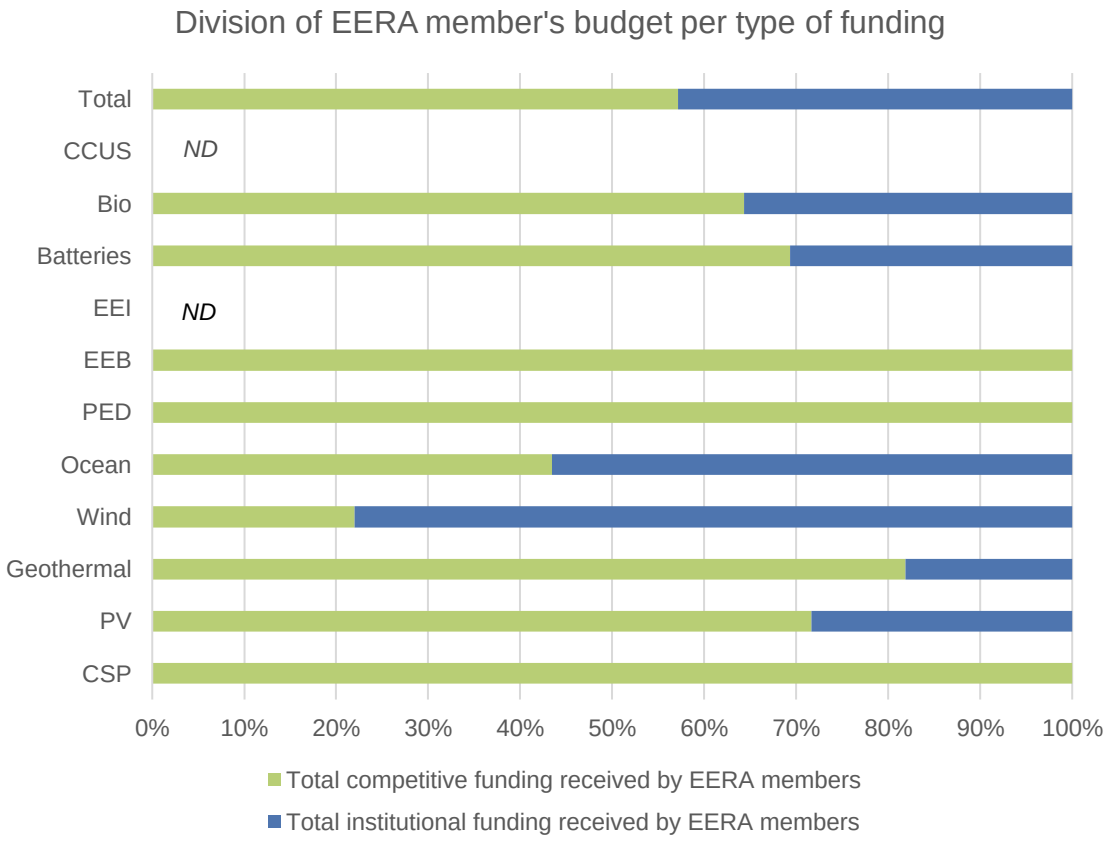


Figure 5. Repartition of reported EERA members' budget available to address "red" and "orange" activities per type of funding

3.4. TOTAL FUNDING

In conclusion, when referring to the total budget reported by EERA JP members (i.e. competitive and institutional funding targeting exclusively "red" and "orange" activities of the SET Plan IPs), an estimation of €262 million are potentially available for EERA members contributing to the execution of those activities. In particular, as shown in Figure 6, EERA JP members are receiving the highest amount of funds for projects targeting "lagging behind" activities of the Bioenergy (with a total of €92 million), Batteries (with a total of €65 million) and Wind (with a total of €67 million) IPs.

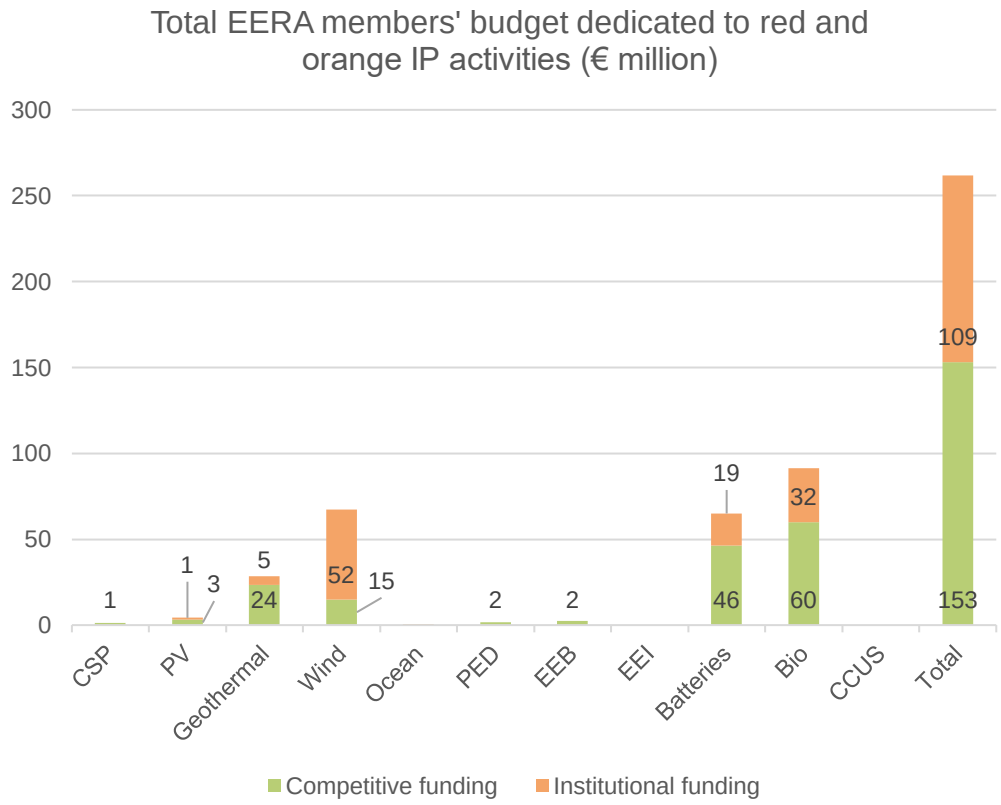


Figure 6. Total budget available to EERA members to address IPs' "red" and "orange" activities

3.5. HUMAN RESOURCES

Also identified as an important asset with regards to the execution of the SET Plan IPs, are Human Resources (HR). As in Y1, the survey takes into consideration HR financed by competitive and institutional funding – but this year, those were measured in Person Months (PM), i.e. Human Effort (HE) performed by a number of identified workers in a 12 months-time. Since this unit is being used in the course of most European-funded projects, it replaced FTEs, the former HR unit measure used in T1.2.'s first interim report, for the present report.

In that sense, EERA members reported 11,018.22 PM contributing to the activities related to the SET Plan IPs' "red" and "orange" activities, out of which, 6,740.82 PM (61%) are being financed through competitive funding (European, national, regional, transnational or other types of EU programmes), and 4,277.4 PM (39%) being financed through institutional funding.

As displayed in Figure 7, IPs' "red" and "orange" activities, which benefit from the largest HR are the Renewable fuels and bioenergy IP's (4,282.22 PM), the Batteries IP's (3,992.5 PM) and the Offshore wind IP's (1,102 PM). We can also observe that, while the Batteries, Renewable fuels and bioenergy and PV IP's "red" and "orange" activities seem to benefit from significant human resources mobilised through institutional funding among EERA members (respectively, 2,413 PM for the Batteries IP, 1,772.40 PM for the Renewable fuels and bioenergy IP, and 90 PM for the PV IP), there still is a majority of IPs "red" and "orange" activities which cannot build on any human resources, made available via institutional funding.

Thus, those activities can seem strongly reliant on competitive funding. Finally, while half of the budget identified for the Offshore wind IP is deriving from institutional funding, no available PMs were reported among EERA JP members to address this IP's "red" and "orange" activities.

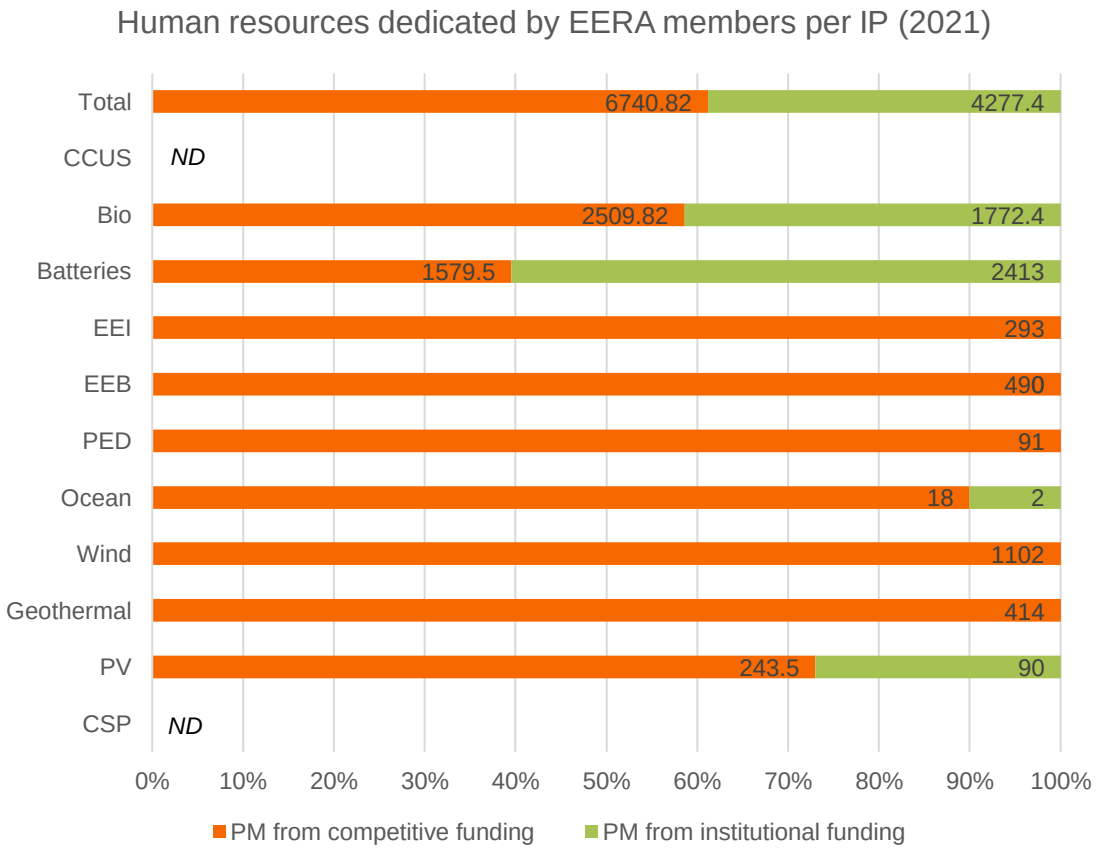


Figure 7. Human resources available for IPs' "red" and "orange" activities among EERA members

3.6. INFRASTRUCTURES

Eventually, SUPEERA's T1.2.'s survey aimed at mapping infrastructures owned by EERA members, that can be mobilised to the execution of the SET Plan IPs' most lagging activities. The survey encompassed laboratories, instruments, test sites and virtual facilities, mainly.

As shown in Table 4, 348 laboratories, together with 2785 instruments, 300 test sites and 51 virtual facilities were listed by EERA members during SUPEERA's T1.2.'s Y1 and Y2. The highest number of infrastructures were reported as dedicated to the Offshore wind IP's "red" and "orange" activities (1591) and to the Batteries IP's "red" and "orange" activities (1002). On the other hand, no infrastructures seem to be available to tackle the execution of the Ocean, Positive Energy District and Energy Efficiency for Buildings IPs' most lagging activities. Following the previous section's analysis, it thus seems that even though EERA JP members lack of available HR support towards the execution of the Wind IP's most lagging activities, nonetheless, they are strong in providing and contributing to its objectives with infrastructures.

IP	Laboratories	Instruments	Test sites	Virtual facilities	Total
CSP	2	7	5	0	14
PV	2	0	2	0	4
Geothermal	30	101	7	6	144
Wind	11	1572	7	1	1591
Ocean	0	0	0	0	0
PED	0	0	0	0	0
EEB	0	0	0	0	0
EEI	1	0	1	1	3
Batteries	262	656	72	12	1002
Bio	39	449	206	31	725
CCUS	1	0	0	0	1
Total	348	2785	300	51	3484

Table 4. Type of EERA members' R&I infrastructures supporting IPs' "red" and "orange" activities

3.7. ANALYSIS: FOCUS ON EERA'S CONTRIBUTION TO 3 SET PLAN IMPLEMENTATION PLANS

Considering the number and quality of data generated from both the surveys issued during the first and the second year of the SUPEERA project, a more detailed analysis could be performed on three of the SET Plan IPs. Therefore, for this second preliminary report, the IPs on Renewable fuels and bioenergy, on Batteries and on Offshore wind were selected for a further analysis.

3.7.1. Contribution of EERA members to the IP "Renewable fuels and bioenergy"

3.7.1.1. Reported projects

As in this entire deliverable, the present analysis focuses on "red" and "orange" activities of the IP on "Renewable fuels and bioenergy", which were identified as needing additional efforts to take-off during SETIS' annual progress report on the implementation of the SET Plan IPs. In that respect, among all this IP's activities, eight were identified as "lagging behind" – either because there were no projects addressing those activities, because there were too few projects addressing them, or because identified projects had not started yet.

Yet, when looking at EERA JP members' answers to T1.2.'s two surveys, only one activity seems to be addressed by no projects at all (i.e. Activity 13: Scale-up solid, liquid and gaseous intermediate bioenergy carriers through biochemical / thermochemical / chemical conversion from sustainable biomass).

Activity	Progress assessment (2020)	Number of projects (2021)	Number of projects (2020)
Activity 2: Demonstrate advanced liquid and gaseous biofuels through biochemical / thermochemical / chemical conversion from sustainable biomass and/or from autotrophic microorganisms and primary renewable energy	●	24	11
Activity 3: Scale-up advanced liquid and gaseous biofuels through biochemical / thermochemical / chemical conversion from sustainable biomass and/or from autotrophic microorganisms and primary renewable energy	●	9	13
Activity 5: Demonstrate other renewable liquid and gaseous fuels (excluding hydrogen) through thermochemical / chemical / biochemical / electrochemical transformation of energy neutral carriers with renewable energy	●	16	0
Activity 6: Scale-up other renewable liquid and gaseous fuels (excluding hydrogen) through thermochemical / chemical / biochemical / electrochemical transformation of energy neutral carriers with renewable energy	●	10	0
Activity 8: Develop high efficiency large scale biomass cogeneration of heat and power	●	13	0
Activity 10: Scale-up high efficiency large scale biomass cogeneration of heat and power	●	3	0
Activity 12: Demonstrate solid, liquid and gaseous intermediate bioenergy carriers through biochemical / thermochemical / chemical conversion from sustainable biomass	●	8	0
Activity 13: Scale-up solid, liquid and gaseous intermediate bioenergy carriers through biochemical / thermochemical / chemical conversion from sustainable biomass	●	0	0
Total		83	24

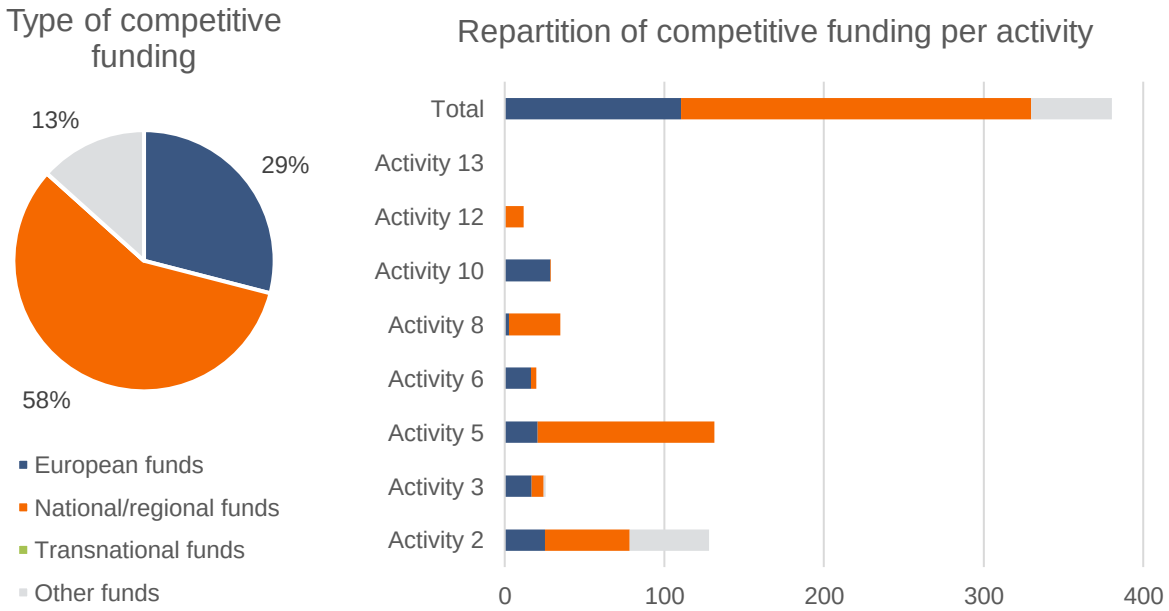
Table 5. Number of projects reported by EERA members for the Renewable fuels and bioenergy IP's "red" and "orange" activities

3.7.1.2. Competitive funding

Furthermore, EERA members have identified €380.55 million funding issued from competitive sources and available to address all of this IP's "red" and "orange" activities, except for Activity 13.

Activity	**Total competitive funding**	European funds	National / regional funds	Transnational funds	Other funds
Activity 2	**127.97**	25.25	53.07	0.00	49.66
Activity 3	**25.58**	16.86	7.60	0.00	1.12
Activity 5	**131,36**	20.49	110.88	0.00	0.00
Activity 6	**19.66**	16.54	3.13	0.00	0.00
Activity 8	**35.02**	2.69	32.33	0.00	0.00
Activity 10	**28.98**	28.60	0.38	0.00	0.00
Activity 12	**11.98**	0.00	11.98	0.00	0.00
Activity 13	**0.00**	0.00	0.00	0.00	0.00
Total	**380.55**	110.43	219.37	0.00	50.78

Table 6. Competitive funding (in € million) dedicated to the Renewable fuels and bioenergy IP's "red" and "orange" activities



Figures 8 & 9. Origin and repartition of competitive funding per "red" and "orange" activity within the Renewable fuels and bioenergy IP

At the national and regional levels, 55 projects were identified by EERA members as supporting "red" and "orange" activities of this IP. Those projects amount to €219.35 million, of which EERA members receive €32.02 million.

Listed national and regional projects are addressing all of those activities, except Activity 13.

At the European level, EERA members declared 42 projects addressing 6 “red” and “orange” activities of this IP (i.e. Activities 2, 3, 5, 6, 8 and 10), amounting to €110.41 million, and of which EERA members receive €27.82 million. Horizon 2020 still funds 35 of these projects.

In addition, none of these activities are deemed to be supported by transnational funds (e.g. Interreg programme), whereas €50.78 million were funded by unspecified types of funding, i.e. neither European, national/regional, or transnational funds.

3.7.1.3. Institutional funding

EERA members declared €31.5 million funding deriving from institutional sources and consistent with the execution of this IP’s “red” and “orange” activities. Among identified institutional funding available for these activities, a vast majority benefits to its Activity 2 (€29,54 million), whereas there were no institutional funding identified at all to address Activities 5, 6, 8, 10, 12 and 13 of this IP.

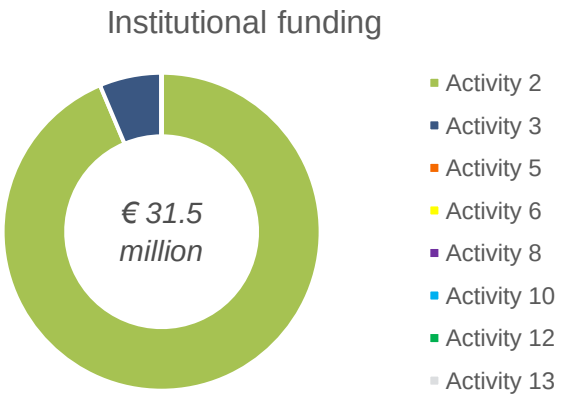


Figure 10. Repartition of non-competitive funding reported by EERA members and addressing the Renewable fuels and bioenergy IP’s “red” and “orange” activities

Overall, the available budget reported by EERA members for this IP (€412.05 million through both competitive and institutional funding sources) thus covers 0.4% of the needs identified for those specific activities by the IWG (€103.7 billion).

3.7.1.4. Human resources

EERA members reported 4,282.22 PM of their own human resources contributing to the execution of this IP's "red" and "orange" activities, of which 2,509.82 PM are supported by projects, and 1,772.4 PM are issued via institutional funding.

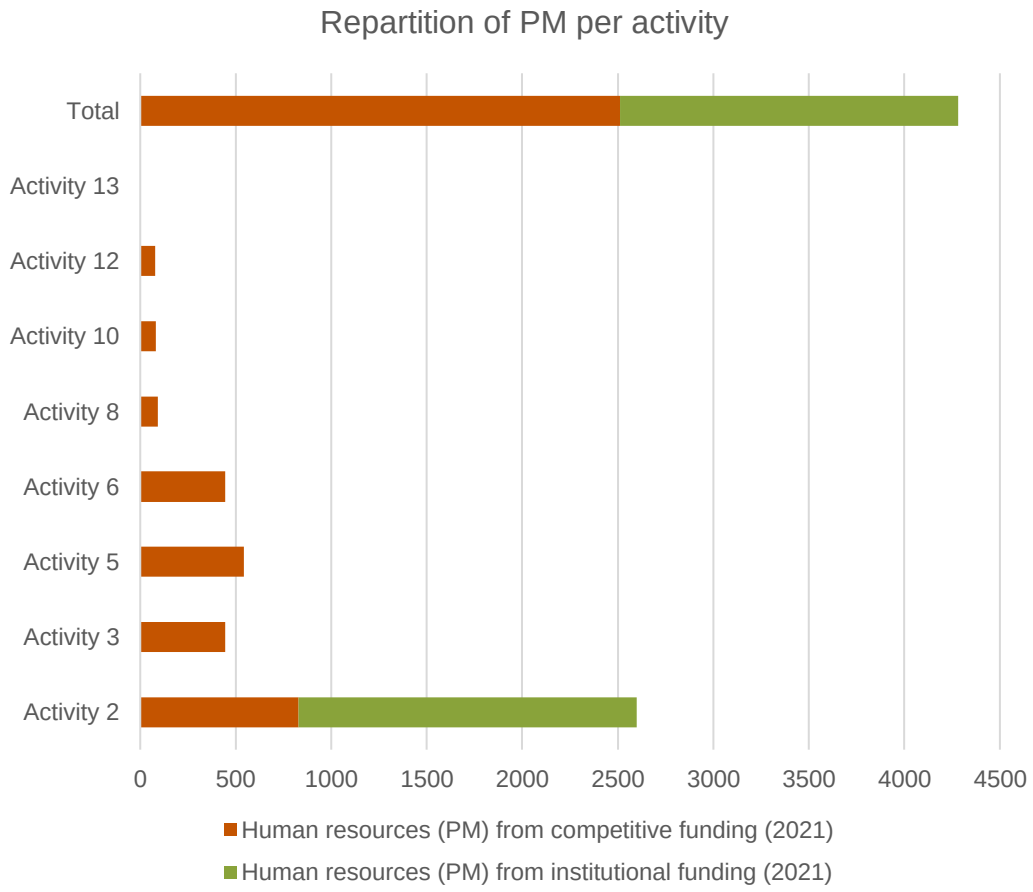


Figure 11. Repartition of PM dedicated to the Renewable fuels and bioenergy IP's "red" and "orange" activities

Activity 2 benefits from the most of the reported EERA members' human resources (2,599.92 PM) for this IP, whereas there were no human effort identified for Activity 13.

3.7.1.5. Infrastructures

Eventually, EERA members listed 39 infrastructures that could support the execution of the IP on Renewable fuels and bioenergy. Activity 2 benefits from the highest number of identified infrastructures, whereas there were no reported infrastructure to address Activities 5 and 10.

Activity	Laboratories	Virtual facilities	Test sites	Instruments	Other infrastructure
Activity 2	24	31	156	332	10
Activity 3	3	0	49	10	0
Activity 5	0	0	0	0	0
Activity 6	1	0	0	10	0
Activity 8	3	0	0	15	0
Activity 10	0	0	0	0	0
Activity 12	5	0	0	46	0
Activity 13	3	0	0	36	0
Total	**39**	**31**	**205**	**449**	**10**

Table 7. Number of listed infrastructures available to address "red" and "orange" activities within the Renewable fuels and bioenergy IP

3.7.2. Contribution of EERA members to the IP "Batteries"

3.7.2.1. Reported projects

During SETIS' 2020 progress review of the SET Plan IPs activities, the IWG on Batteries identified five "lagging behind" activities, one of which qualified as "red", i.e. having made no progress (i.e. Activity 2.2: Foster development of cell and battery manufacturing equipment). EERA members declared 61 ongoing projects between 2020 and 2021, which are addressing all of those five "lagging behind" activities.

Activity	Progress assessment (2020)	Number of projects (2021)	Number of projects (2020)
Activity 1.3: Advancement of batteries for stationary energy storage	●	4	6
Activity 1.4: Post-Li ion for e-mobility	●	8	8

Activity 2.1: Foster development of materials processing techniques and components for fast industrialisation compatible with present mass production lines	🟠	5	9
Activity 2.2: Foster development of cell and battery manufacturing equipment	🔴	5	6
Activity 3.1: Hybridation of battery systems for stationary energy storage (ESS)	🟠	6	4
Total		28	33

Table 8. Number of projects reported by EERA members for the Batteries IP's "red" and "orange" activities

3.7.2.2. Competitive funding

Furthermore, these 61 reported projects addressing "red" and "orange" activities of the Batteries IP amount to €332.1 million, of which EERA members receive €46.14 million.

Activity	**Total competitive funding**	European funds	National / regional funds	Transnational funds	Other funds
Activity 1.3	**87.57**	81.16	6.41	0.00	0.00
Activity 1.4	**53.39**	43.65	9.54	0.00	0.20
Activity 2.1	**83.09**	67.78	7.57	0.00	8.27
Activity 2.2	**70.25**	52.92	17.33	0.00	0.00
Activity 3.1	**37.80**	33.57	4.23	0.00	3.99
Total	**332.10**	279.08	45.08	0.00	12.46

Table 9. Competitive funding (in € million) dedicated to the Batteries IP's "red" and "orange" activities

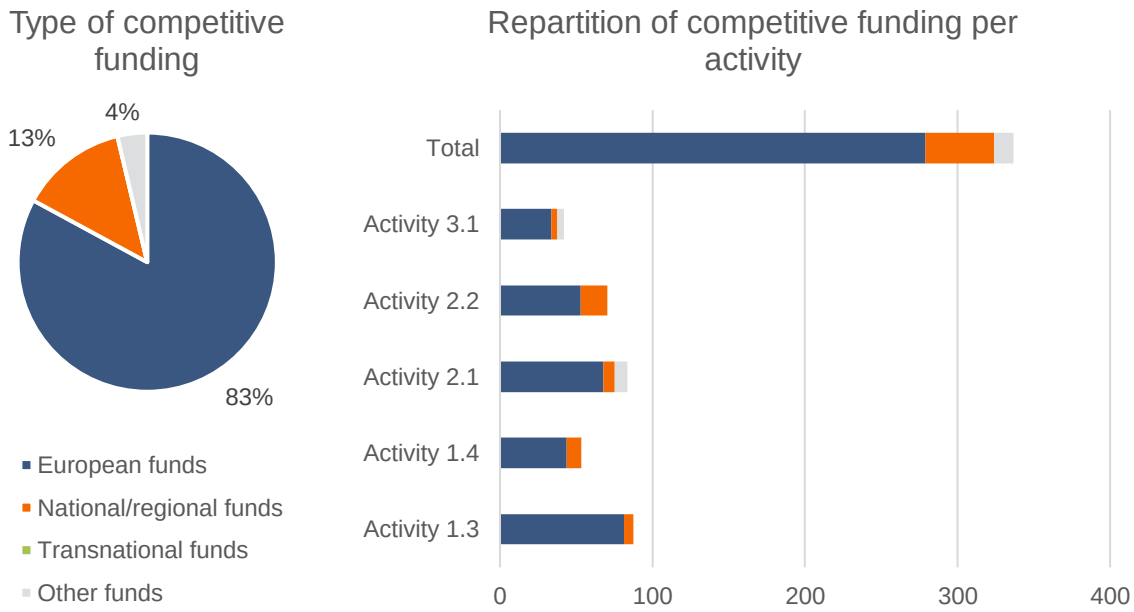


Figure 12 & 13. Origin and repartition of competitive funding per "red" and "orange" activity within the Batteries IP

At national and regional levels, 26 projects support all "red" and "orange" activities of the IP on Batteries. These projects represent a total amount of €44.56 million, of which €37.10 million are granted to EERA members.

EERA members listed 29 projects that receive EU funding, for a total amount of €279.07 million, supporting all "orange" and "red" activities, the most support going for Activity 1.3. Among this funding, €48.88 million are still deriving from the Horizon 2020 framework. Also, EERA members receive €4.62 million from this EU funded budget.

No projects seem to receive funding from transnational sources; yet, 6 projects were reported as benefiting from another type of funding scheme, that is neither European, national/regional or transnational, amounting to €12.46 million, and supporting Activities 1.4, 2.1 and 3.1.

3.7.2.3. Institutional funding

EERA members are receiving €18.8 million from institutional funding addressing "red" and "orange" activities of the IP on Batteries. This source of EERA members' funding supports all "lagging behind" activities of the IP on Batteries, and more particularly, its Activity 1.4, amounting to €7.29 million.

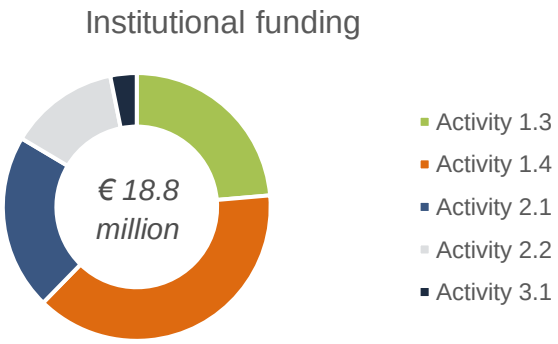


Figure 14. Repartition of non-competitive funding reported by EERA members and addressing the Batteries IP's "red" and "orange" activities

Overall, the available budget reported by EERA members for this IP (€350.9 million through both competitive and institutional funding sources) thus covers 137.6% of the needs identified for those specific activities by the IWG (€255 million). While it seems that the available budget therefore covers more than what was identified as the needs for this IP, a reassessment of the progress made under each activity, and their revision and reclassification, might be topical.

3.7.2.4. Human resources

EERA members reported 3,992.49 PM contributing to "red" and "orange" activities of the IP on Batteries, of which 1,579.49 PM are supported by projects and 2,413 PM by institutional funding. Activities 1.4 and 1.3 are benefitting from the highest number of reported PM (respectively, 1,532.33 PM and 861.33 PM). The only "red" activity of the IP on Batteries (i.e. Activity 2.2) still benefits from 438 PM from EERA members, of which 318 PM derive from national or regional competitive funding, and 120 PM from institutional funding.

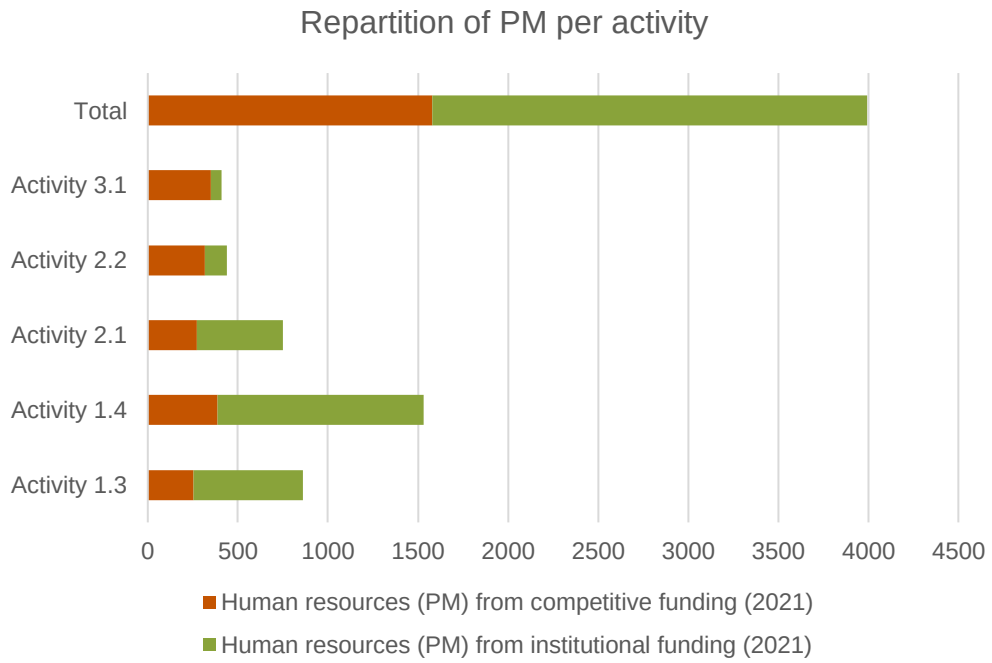


Figure 15. Repartition of PM dedicated to the Batteries IP's "red" and "orange" activities

3.7.2.5. Infrastructures

EERA members listed 1011 infrastructures that can support the implementation of all "red" and "orange" activities of the IP on Batteries. While this IP's Activity 3.1 was reported by EERA members as supported by the lowest amount of both competitive and institutional funding, it is still supported by a significant number of infrastructures, which should further its potential.

Activity	Laboratories	Virtual facilities	Test sites	Instruments	Other infrastructure
Activity 1.3	46	4	16	151	0
Activity 1.4	60	4	21	185	9
Activity 2.1	29	0	20	116	0
Activity 2.2	83	0	5	104	0
Activity 3.1	44	4	10	100	0
Total	**262**	**12**	**72**	**656**	**9**

Table 10. Number of listed infrastructures available to address "red" and "orange" activities within the Batteries IP

3.7.3. Contribution of EERA members to the IP "Offshore wind"

3.7.3.1. Reported projects

The IP on Offshore wind bears four activities, which were labelled as “red” or “orange” during SETIS’ 2020 progress evaluation of the SET Plan execution. EERA members identified 42 projects between 2020 and 2021, which are addressing those four activities.

Activity	Progress assessment (2020)	Number of projects (2021)	Number of projects (2020)
Activity 1: System integration	🟠	8	3
Activity 5: Wind energy industrialisation	🔴	18	2
Activity 8: Ecosystem and social impact	🟠	3	5
Activity 9: Human Capital Agenda	🟠	2	1
Total		31	11

Table 11. Number of projects reported by EERA members for the Offshore wind IP’s “red” and “orange” activities

3.7.3.2. Competitive funding

Furthermore, those reported projects are deemed to amount to €167.44 million, of which EERA members receive €15.64 million.

Activity	**Total competitive funding**	European funds	National / regional funds	Transnational funds	Other funds
Activity 1	**117.16**	100.43	16.73	0.00	0.00
Activity 5	**41.45**	4.71	29.34	0.00	3.50
Activity 8	**3.66**	2.39	1.27	0.00	0.00
Activity 9	**5.17**	5.16	0.00	0.00	0.00
Total	**167.44**	112.69	47.34	0.00	3.50

Table 12. Competitive funding (in € million) dedicated to the Offshore wind IP’s “red” and “orange” activities

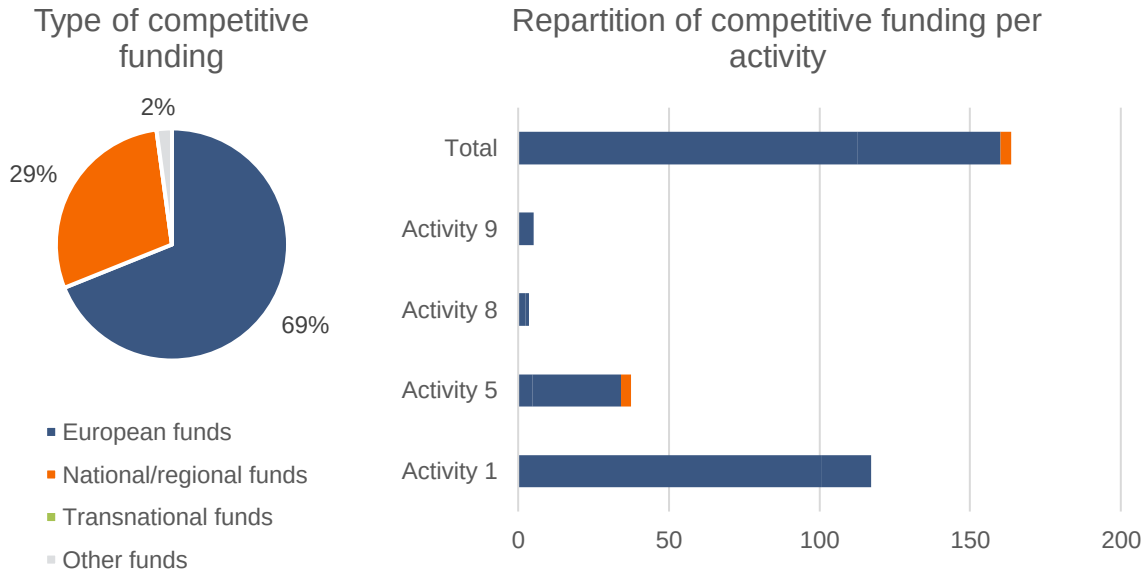


Figure 16 & 17. Origin and repartition of competitive funding per "red" and "orange" activity within the Offshore wind IP

At national and regional levels, 26 projects support the activities of the IP on Offshore wind. The total amount reaches €47.35 million, of which EERA members receive €4.77 million. Projects receiving funding from national or regional funding sources support all "red" and "orange" activities, except for Activity 9. Even if the 2020 SETIS report labelled Activity 5 as "red", it is still supported by €29.34 million deriving from competitive funding, via 15 projects, according to EERA members' contributions. This new finding might be a sign of a foreseeable taking-off of this IP's activity in the coming months or years (i.e. Activity 5: Wind energy industrialisation).

At the European level, EERA members declared 13 funded projects, for an overall budget of €116.6 million supporting all "red" and "orange" activities, and of which €8.95 million are benefitting to EERA members. €90.7 million are still deriving from Horizon 2020 framework. Furthermore, a clear majority of those projects are supporting the IP's Activity 1, with 6 projects amounting to €100.43 million.

3.7.3.3. Institutional funding

EERA members reported a €52.1 million budget, coming from institutional funding and addressing "red" and "orange" activities of the Offshore wind IP. Most of this budget addresses Activities 5 (labelled as "red") and 1 (labelled as "orange"), whereas no institutional funding benefits to the Activity 9 (labelled as "orange").

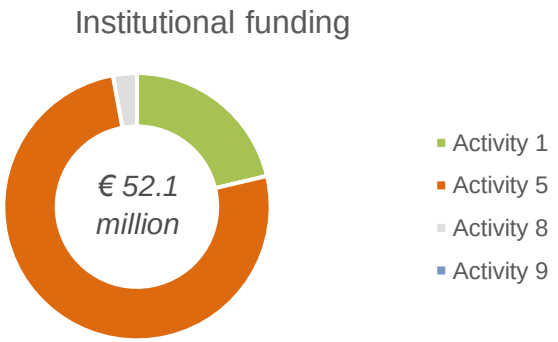


Figure 18. Repartition of non-competitive funding reported by EERA members and addressing the Offshore wind IP's "red" and "orange" activities

Overall, the available budget reported by EERA members for this IP (€219.54 million through both competitive and institutional funding sources) thus covers 95.9% of the needs identified for those specific activities by the IWG (€229 million).

3.7.3.4. Human resources

EERA members reported 1,102 PM contributing to the activities related to "red" and "orange" on Offshore wind, all of which are supported by projects. Activity 5, even if labelled as "red" during SETIS' 2020 progress report, is the activity supported by the highest number of reported PM, followed by Activity 1. On the contrary, no human effort was reported to address Activity 9.

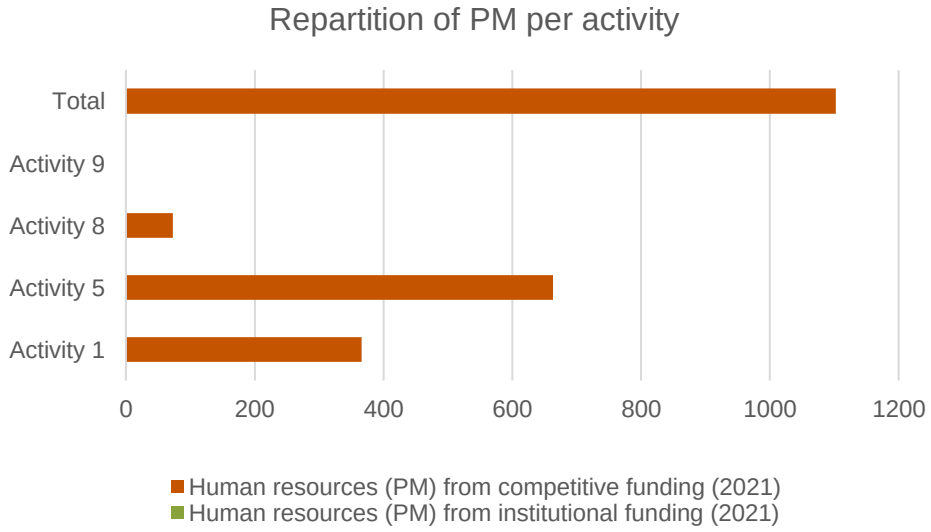


Figure 19. Repartition of PM dedicated to the Offshore wind IP's "red" and "orange" activities

3.7.3.5. Infrastructures

EERA members listed 1591 infrastructures that can support the implementation of “red” and “orange” activities of the IP on Offshore wind. In line with our previous findings on the reported competitive funding for this IP’s “red” and “orange” activities, Activity 5 accounts the highest number of EERA members related infrastructures; whereas there were no listed infrastructures to the benefit of the Offshore wind IP’s Activity 9. It could be interpreted as well, as a sign that Activity 5 might switch from “red” to “orange” or “green” in the next SETIS’ progress report.

Activity	Laboratories	Virtual facilities	Test sites	Instruments	Other infrastructure
Activity 1	2	1	4	510	0
Activity 5	8	0	0	560	0
Activity 8	1	0	3	502	0
Activity 9	0	0	0	0	0
Total	**11**	**1**	**7**	**1572**	**0**

Table 13. Number of listed infrastructures available to address “red” and “orange” activities within the Offshore wind IP

IV. CONCLUSION AND WAY FORWARD

The present report aims at giving a second preliminary analysis of EERA members resources supporting the implementation of “orange” and “red” activities of the SET Plan IPs, building on the mapping of the competitive funding (supported by projects), human resources, infrastructures and public institutional funding (attributed by a governmental body or agency without any competitive processes), reported by EERA members throughout SUPEERA’s T1.2.’s annual survey.

In that perspective, the information provided in the present report is partly based, on the one hand, on SUPEERA’s deliverable 1.2. – “Second interim report on the state of play of the SET Plan IPs and mapping of R&I activities”, which builds on SETIS’ annual report on the progress of the SET Plan IPs implementation, and which provided information on the state of play of the execution of their “red” and “orange” activities, as well as SETIS’ annual report’s raw data itself; the main data contained in this report, on the other hand, was retrieved from an extensive survey conducted among EERA members representatives within its Joint Programmes.

4.1. General analysis

For this second year of the SUPEERA project, EERA JP members have reported on new resources to address the SET Plan IPs’ most “lagging” activities. Among the 11 IP (and corresponding JP) in this study’s scope, 9 have returned new contributions to enrich SUPEERA partners’ overview of these available resources, reaching 36 answers for this year.

Overall, EERA JP members have reported 177 more projects in 2021, reaching 436 ongoing projects contributing to those “lagging behind” activities of the SET Plan. From the collected data, it appears that only 7 “red” and “orange” activities (5 red and 2 orange activities) over 36 remain without any ongoing project at all (i.e. the Ocean energy IP bears 3 “red” activities, the Renewable fuels and bioenergy IP and the CCUS IP have 1 “red” activity each, whereas the IP on Energy efficiency in industry accounts 2 “orange” activities, also identified as “lagging behind” activities in SETIS’ previous progress report).

Like last year, EERA JP members reported that competitive funding formed the most of EERA members’ contribution to the activities of the IPs, even when looking at those activities “lagging behind”. The total amount of reported competitive funding has reached €5066 million for both years of SUPEERA, while more specifically in 2021, €740 million more were reported. The most contribution was identified for the IPs on Positive energy districts (€3,764 million), on Renewable fuels and bioenergy (€381 million), on Batteries (€337 million) and on Geothermal (€286 million). While this year, National and regional funds account for the most important funding sources for EERA members’ overall budgets (80%), however, this result is significantly driven by PED’s reported activities’ specific funding schemes. Indeed, most IPs’ “red” and “orange” are still relying on important shares of European funding X (i.e. the IPs on CCUS, Batteries, Energy efficiency in industry, Energy efficiency for buildings, Ocean energy,

Offshore wind, Photovoltaic energy and CSP). EERA JP members have received around 3% of this total budget, which gives them a non-negligeable role in the execution of these activities.

The second type of funding analysed by this task was institutional funding, i.e., own resources at the disposal of EERA JP members attributed without any competitive processes. Non-competitive funding accounts for 43% of EERA JP members' overall budget, reaching €113 million since SUPEERA's inception. The IPs on Offshore wind, Renewable fuels and bioenergy and Batteries benefit from the most important institutional funding. Connecting the dots, and building upon EERA JP members reported projects and funding since 2020, an estimation of €5.179 billion is thus potentially available to tackle those activities that were qualified as "lagging behind", and needing additional efforts to take-off.

Also serving those objectives, EERA JP members have reported deploying 11,018.22 PM contributing to those activities of the SET Plan IPs. These human resources are both supported by competitive funding (61%) and institutional funding (39%).

Eventually, EERA JP members have listed a total of 348 laboratories, 3785 instruments, 300 test sites and 51 virtual facilities, available to support the execution of those "red" and "orange" activities of the SET Plan IPs.

4.2. Detailed analysis

Taking a closer look at those IPs activities that were the subject of more feedback coming from EERA JP members for this year, a more detailed analysis was conducted on EERA's contribution to support these activities' execution. As such, the data on three IPs was further analysed: the IPs on Renewable fuels and bioenergy, on Batteries and on Offshore wind.

4.2.1. Reported projects

Looking at reported projects for all of these three IPs of concern, it is interesting to note that IWGs have decided to label some activities as "red", even though EERA JP members reported that they were enrolled in ongoing projects addressing those activities nevertheless. This could be explained, either because reported projects started just recently, which means that the activity is gaining a new dynamic; or, that the IWGs have chosen to use the "red" label as a means to signify that those activities were not advancing well, even though there were addressed by ongoing projects. According to EERA JP members, moreover, among the three IPs under focus, only one activity over seventeen is not addressed by any project at all.

4.2.2. Competitive funding

Furthermore, those three IPs' "red" and "orange" activities were all strongly supported by EU funds. European funding is reported as the most important source of funding for both the IP on Offshore wind (69%) and Batteries (83%), whereas National/Regional sources of funding seem to be supporting massively the Renewable fuels and bioenergy IP (58%). One activity of this latter IP still lack available sources of funding to take-off, according to EERA JP members (i.e. Activity 13: Scale-up solid, liquid and gaseous intermediate bioenergy carriers through biochemical / thermochemical / chemical conversion from sustainable biomass).

4.2.3. Institutional funding

Institutional sources of funding can often act as complementary financial support to those SET Plan IPs "red" and "orange" activities. This is notably the case for some activities that did not benefit from any competitive funding support, or from little competitive funding support, such as the IP on Renewable fuels and bioenergy's Activity 3 (i.e.: Scale-up advanced liquid and gaseous biofuels through biochemical / thermochemical / chemical conversion from sustainable biomass and/or from autotrophic microorganisms and primary renewable energy), or the IP on Batteries' Activity 2.2 (i.e.: Foster development of cell and battery manufacturing equipment). But for this year of SUPEERA, there seems to be a lack of sufficient support, or coordination, between what is funded at the European, National and Regional levels – quite often, Activities that are strongly supported by competitive funding, and especially by EU funds, are also the object of quite a number of national investments; whereas some lagging behind activities still lack additional help to take-off (e.g.: Offshore wind IP's Activity 8: Ecosystem and social impact, and Activity 9: Human Capital Agenda).

4.2.4. Human resources

Reporting on available human resources among EERA JP members towards the execution of the SET Plan IPs' "red" and "orange" activities, and more specifically, at those under our focus, also contributes to get the most accurate display of EERA JP members' contribution. Especially for this year, it showed the role played by institutional funding received among EERA JP members to support the taking-off of the SET Plan IPs' most lagging activities with human effort. As such, the present analysis shows how the IP on Renewable fuels and bioenergy benefits from 4,282.22 PM in total, among which, 41% is supported by institutional funding; the IP on Batteries can count on 3,992.42 PM for its "red" and "orange" activities, of which, 60% is funded via institutional funds. Yet, this is not true for the IP on Offshore wind, which is supported by 1.102 PM, all funded via projects. The lack of funding for certain identified

activities is reflected in the repartition of the reported human effort, in overall the same manner (there is a need for additional funding and human effort for the Renewable fuels and bioenergy IP's Activity 13; as well as the IP on Offshore wind's Activity 9).

4.2.5. Infrastructures

Eventually, with regards to the listed available infrastructures run by EERA JP members to support the execution of "red" and "orange" activities of the IPs of concern, the same conclusion can be drawn as for human resources: there is a lack of sufficient infrastructures support for the same activities that lack funding. For some of them, it results in no infrastructures at all reported by EERA JP members (e.g.: Activity 9 of the IP on Offshore wind, and Activities 5 and 10 of the IP on Renewable fuels and bioenergy).

4.3. Conclusion

As the SET Plan was published in 2007, and its communities progressively grew more and more organised and dynamic, the energy research community has strengthened its cooperation and synergies. This is reflected in both SETIS' and SUPEERA's annual progress assessments and analyses: all IPs' activities, even those lagging behind, are progressively put on track. Looking closer at EERA community's role to facilitate the execution of the SET Plan, and more specifically, to the implementation of its most "lagging behind" priorities, their available resources as they were reported during this task of SUPEERA should play a significant contribution to make sure we reach our common R&I objectives.

This report on the mapping and optimisation of the SET Plan related EERA resources is preliminary and will be updated once more in Y3. Building on Y1's methodology and first conclusions to gather information upon the contribution of EERA members to the SET Plan IPs, as well as to draw first recommendations on the potential cooperation and synergies towards the full execution of the IPs' activities, the present report was able to provide a second set of findings, and to update the previous ones.

Indeed, for this second year of the SUPEERA project, the analysis showed how European funding still strongly support the realisation of the SET Plan activities, and most especially, those that are "lagging behind" (e.g. "red" and "orange" activities of the SET Plan, according to SETIS' annual progress report). Nevertheless, during this year's reporting process, EERA JP members have reported on a more important institutional budget available to support those activities, which shows the potential of the coordination between European, National and Regional levels for our common energy research priorities. However, these synergies should be encouraged and strengthened, as it seems all of these levels tend to support the same stakeholder's priorities, leaving some others behind as a function of market demand. Analysing

available infrastructures and human resources among EERA JP members supports the same conclusion.

In line with previous recommendations deriving from the first year of SUPEERA, some EERA JPs have created their own projects catalogue, allowing more accurate monitoring of the IP's dynamic: this is the case of the JP on Renewable fuels and bioenergy and Offshore wind. These have been consulted and used, when possible, for the conduction of this analysis.

Eventually, looking at the bigger picture, the European Commission has announced that the SET Plan will be revised in the coming year, and its objectives and governance, adjusted to both our political, social and human challenges, as well as to the lessons the SET Plan community can build on, fifteen years after its inception. The third and last year of SUPEERA will thus capitalise on the present preliminary findings, as well as on these new perspectives.

ANNEX 1 – EXAMPLE OF EERA SURVEY (FOR THE PV IP)

SUPEERA PROJECT | Survey for **mapping R&I resources** among EERA aisbl membership

Why this survey

We are contacting you as an active research and technological organization and as a member of EERA aisbl.

On January 1st 2020, EERA aisbl was granted a CSA project by the European Commission called **SUPEERA** (*Support to the coordination of national research and innovation programmes in areas of activities of the European Energy Research Alliance*). Its Work Package 1 is dedicated to **facilitating the execution of the SET Plan**.

In this context, **SUPEERA partners need to identify, map and monitor the resources available among EERA aisbl membership**, in terms of 1) the **human resources and infrastructures** dedicated to the execution of the SET Plan Implementation Plans (IPs), and 2) the **public institutional and competitive funding** for the execution of the SET Plan IPs.

This analysis was **already conducted once in 2020**, in the first year of the project. The present survey aims at **updating previous findings**, and at **focusing on those activities of the SET Plan Implementations Plans that were labelled as "orange"** (projects are expected to take-off in the near future to address the activity) **and "red"** (preparatory work / no progress of the activity) during SETIS 2020 progress report, and as such, are deemed to need additional effort to take off.

Some preliminary remarks

Sheet 2: Data 1
Please list in Sheet 2 your organization's ongoing projects / projects to take-off, which contribute to address listed R&I activities.
- If a project you indicate tackles more than one IP activity, please repeat the entry for each activity dividing the budget accordingly (as much as possible)
- Human resources are considered in terms of "human effort" (person-months - PM)
- Competitive funding, which can be either national, transnational (e.g. Interreg) or European (Horizon 2020 / Horizon Europe), refers to public funding distributed through dedicated competitive programmes and calls from the respective funding agencies/bodies

Sheet 3: Data 2
Please list in Sheet 3 your organization's research infrastructure and institutional funding.
- Infrastructures encompass laboratories, tools, virtual facilities, etc.
- Institutional funding is considered as public funding that universities and research organisations receive annually from a public source such as governmental bodies.

Some projects reported to SETIS during its 2020 assessment and/or during the first year of SUPEERA have already been included in the two sheets. If your organization takes part in some of these projects, please help us fill-in the blanks, and/or update the information.

For each IP activity in which you are active, please :

1) Select the Implementation Plan Activity(ies) in which your organisation is active
2) Indicate the projects in which your organisation is involved. Please also indicate future projects (planning to start in maximum 6 months)

For each activity you have previously indicated being active, fill in the table with the following information:
- Type of funding: EU, transnational, national or regional funding.
- Status: ongoing or planned to start in the near future (within 6 months maximum).
- Alignment: indicated projects cover (entirely or partially) the mentioned activity.

The first part gathers information about the project as a whole while the second part only concerns your organisation (the amount of money your organisation receives for this project by the EU, your country, your region, etc., and how many PM is your organisation investing in this project). The third part relates to the cooperation with industry and the cross-cutting topics.
If an institutional body is providing funds, it must be on a competitive basis (depending on the approval of a project).
The amount must be expressed in million euros. If the national currency is not euro, please apply the exchange rate of the day of reporting.

Name of Activity	Is your organisation active in the activity (insert x if active)	Competitive funding										Cooperation with industry	Cross-cutting Topics
		Project Title	Acronym	Funding scheme	Type of project	Period of execution (from MM.YY-MM.YY)	State of execution	Project Budget (in million €)	Alignment of Project with activity (in %)	Information related to your organisation		*Does the project/initiative include cooperation with industry? Y/N – if Y, on what (open field)*	*Does the project/initiative cover cross-cutting topics (both technological – e.g. AI, materials, Big Data… - and non-technological, e.g. re to socio-economical, policy aspects)? Y/N – if yes, on what (open field for comments)*
										For the all project (in million €)	PM		
Example	x	*SUPport to the coordination of national research and innovation programmes in areas of activity of the European Energy Research Alliance*	*SUPEERA*	*Horizon 2020*	*Coordination/Support*	*01.20-12.23*	*Ongoing*	*1,67 €*	*100*	*0,15 €*	*14*	*N*	*N*
Activity 6: Cross-sectoral research at lower TRL		***(REPORTED DURING 2020 SETIS ANALYSIS - tbc)*** SolarWAVE - Waterproof perovskite solar cells	SolarWAVE	*National/Regional Funds*				0,24 €					
		(REPORTED DURING 2020 SETIS ANALYSIS - tbc) BOBTANDEM Solar Era Net	BOBTANDEM	*National/Regional Funds*									
		(REPORTED DURING 2020 SETIS ANALYSIS - tbc) IPVF	IPVF	*National/Regional Funds*									
		(REPORTED DURING 2020 SETIS ANALYSIS - tbc) THESIS	THESIS	*National/Regional Funds*									
		(REPORTED DURING 2020 SETIS ANALYSIS - tbc) Solar Fuels		*National/Regional Funds*									

For each IP activity in which you are active, please indicate (if applicable) :
1) If you dedicate some institutional funding to one or several selected activities
2) If your organisation possesses relevant infrastructures useful for the execution of the selected activities (in terms of laboratories, instruments, test sites, virtual facilities...)

	Please, indicate only the budget and the PM your organisation is directly dedicating to one or more activities. ***The funding must not depend on any project but must be money at the disposal of your organisation or directly granted by an institutional body, without any competition.***	***List the infrastructures your organisation possesses and that can be mobilized for the excution of one or more activities.***

Name of Activity	**Non-competitive/institutional funding**		**Infrastructures (please only list infrastructures essential to the realisation of the mentioned activity)**									
	Funding (in million €)	**PM**	**Number of laboratories**	***Specify types***	**Number of Instruments**	***Specify types***	**Number of test sites**	***Specify types***	**Number of virtual facilities**	***Specify types***	**Other (Number)**	***Specify types***
Activity 6: Cross-sectoral research at lower TRL												

ANNEX 2 – LIST OF REPORTED PROJECTS PER IP

Implementation plan	Activity	**Project Title** (*List all the projects in which your organisation is involved and that cover the different activities*)	**Acronym**	**Funding scheme** *(Select between EU, transnational, national or regional funding)*	**Period of execution** (*from MM.YY-MM.YY*)	**Project Budget** *(in million €)*
Concentrated solar power	**Activity 9: Thermal energy storage**	Small-Scale Solar Thermal Combined Cycle	POLYPHEM	*Horizon 2020*	04.18 - 03.22	4.98
		Solar Facilities for the European Research Area - Third Phase	SFERA3	*Horizon 2020*	01/01/2019 - 31/12/2022	9.10
		SOlar Calcium-looping integRAtion for Thermo-Chemical Energy Storage	SOCRATCES	*Horizon 2020*	01.18-12.20	4.99
Photovoltaic	**Activity 6: Cross-sectoral research at lower TRL**	*REPORTED DURING 2020 SETIS ANALYSIS* SolarWAVE - Waterproof perovskite solar cells	SolarWAVE	*National/Regional Funds*	-	0.24
		REPORTED DURING 2020 SETIS ANALYSIS BOBTANDEM Solar Era Net	BOBTANDEM	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS IPVF	IPVF	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS THESIS	THESIS	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Solar Fuels	-	*National/Regional Funds*	-	-
		Innovative Building Envelope for Sustainable, Modular, Aesthetic, Reliable and efficient construction	BE-Smart	*Horizon 2020*	10.18-09.22	9.42
		METABUILDING LABS	METABUILDING LABS	*Horizon 2020*	01.21-01.26	16.30

		Advanced centre for testing degradation and failures in new and emerging solar cells	Degradation Lab	*Other EU Funds*	01.19-12.22	1.00
		Multilayer coatings for steel foils as a innovative base for more efficient flexible CIGS photovoltaics	InnovaStell4CIGS	*National/Regional Funds*	04.20-03.22	0.54
		Fully connected virtual and physical perovskite photovoltaics lab	VIPERLAB	*Horizon 2020*	06.21-11.24	5.60
		Optimized energy concepts in the early planning phase of resilient, energy-efficient neighbourhood	VITALITY District	*National/Regional Funds*	09.20-08.22	0.59
		Prescriptive analytics and advanced work force management for optimized O&M of solar power plants	PANAMA	*Other EU Funds*	07.20-12.22	0.59
		Advance in Degradation Modelling of PV Modules and Components	ADVANCE!	*National/Regional Funds*	01.21-12.22	0.80
		Digital solutions for prescriptive O&M strategies of photovoltaic power plants	APOLLO	*National/Regional Funds*	10.21-09.23	0.57
		Superior Efficiency and Flexibility with Quantum Nano-structured Perovskite Solar Cells enhanced by Light Management	SUPERSOLAR	*National/Regional Funds*	07.18-02.22	0.24
		Local Resources for Multifunctional Tetrahedrite-based Energy-Harvesting Applications	LocalEnergy	*National/Regional Funds*	10.18-05.22	0.24
		Novel building Integration Designs for increased Efficiencies in Advanced climatically tuneable Renewable Energy Systems	IDEAS	*Horizon 2020*	5.19-4.23	4.00
Geothermal	**Activity 5: Exploration techniques (including resource prediction and exploratory drilling)**	*REPORTED DURING SUPEERA FIRST YEAR ANALYSIS* Characterisation of the transition zone in the deep basin context for the exploitation of geothermal reservoirs in Alsace	CANTARE	*National/Regional Funds*	07.15-03.21	0.81

		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Geosciences for the energy systems transition: Exploiting deep groundwater	G-eau-TE	*National/Regional Funds*	01.21-12.28	4.31
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Laboratory of excellence for deep geothermal energy	LabEx G-eau-thermie Profonde	*National/Regional Funds*	03.12-31.20	3.00
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Geothermal resources of crustal fault zones: exploring new systems for competitive geothermal power production	GERESFAULT	*National/Regional Funds*	10.19-09.23	0.80
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Methodology for the construction of a conceptual model of a Fault type geothermal reservoir in a graben context (France)	REFLET	*National/Regional Funds*	from 01.15-12.20	8.33
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Multidisciplinary innovation and demonstration platform for the exploration and development of high energy geothermal resources in volcanic context	GEOTREF	*National/Regional Funds*	from 04.15-12.23	4.90
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Geothermal prospection in St Kitts island Caraibes	GPSKitts	*Other*	from 02.20-03.22	0.15
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Geothermal Cadastres for the Pays Terres de Lorraine Territory	CAGELO	*National/Regional Funds*	from 09.20-02.22	0.20
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Geothermal Village	Geothermal Village	*Other EU Funds*	from 01.21-12.23	2.00

		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Development of Digital Interpretation and Processing Tools for Geophysical Signals for unconventional reservoirs	DONUTS	*National/Regional Funds*	from 04.19-04.21	1.40
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Wärme unter unserer Stadt - Effiziente Erkundung des geothermischen Potentials in urbanen Räumen	GeoPUR	*National/Regional Funds*	04.20-03.22	0.60
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Effiziente seismische Exploration und Überwachung geothermischer Reservoire unter Nutzung ortsverteilter faseroptischer Dehnungssensorik entlang existierender Telekommunikationsinfrastruktur	SENSE	*National/Regional Funds*	03.20-02.23	1.01
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Cooperation in Geothermal energy research Europe-Mexico for development of Enhanced Geothermal Systems and Superhot Geothermal Systems	GEMex	*Horizon 2020*	10.16-05.20	10.00
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Hessen 3D 2.0: Teilprojekt III: Untergrundtemperaturmodell von Hessen und Neubewertung der tiefen und mitteltiefen geothermischen Potenziale Hessens	Hessen 3D 2.0	*National/Regional Funds*	01.16-06.20	0.97
		REPORTED DURING 2020 SETIS ANALYSIS EoCoE-II	EoCoE-II	*Other EU Funds*	2019-2021	8.60
		REPORTED DURING 2020 SETIS ANALYSIS GEOPRO	GEOPRO	*Other EU Funds*	2019-2021	5.00

		REPORTED DURING 2020 SETIS ANALYSIS REFLECT	REFLECT	*Other EU Funds*	2020-2022	5.00
		REPORTED DURING 2020 SETIS ANALYSIS SYSEXPL - REX (D, CH)	SYSEXPL - REX (D, CH)	*Transnational Funds*	2019-2023	3.20
		REPORTED DURING 2020 SETIS ANALYSIS SCAN (NL)	SCAN (NL)	*National/Regional Funds*	2019-2021	15.00
		REPORTED DURING 2020 SETIS ANALYSIS LEAN (NL)	LEAN (NL)	*National/Regional Funds*	2018-2021	13.50
		REPORTED DURING 2020 SETIS ANALYSIS EPOS-NL (NL)	EPOS-NL (NL)	*National/Regional Funds*	2019-2024	12.50
		REPORTED DURING 2020 SETIS ANALYSIS ANIGMA (NO)	ANIGMA (NO)	*National/Regional Funds*	2015-2019	1.20
		REPORTED DURING 2020 SETIS ANALYSIS TheMSES (NO)	TheMSES (NO)	*National/Regional Funds*	2016-2022	2.40
		REPORTED DURING 2020 SETIS ANALYSIS GEOTREF (FR)	GEOTREF (FR)	*National/Regional Funds*	2015-2023	43.00
		REPORTED DURING 2020 SETIS ANALYSIS Labex G-eau-thermie Profonde (FR)	LabEx G-eau-thermie Profonde	*National/Regional Funds*	2012-2020	6.30
		REPORTED DURING 2020 SETIS ANALYSIS Therma'li (FR)	Therma'li (FR)	*National/Regional Funds*	2019-2023	1.60
		REPORTED DURING 2020 SETIS ANALYSIS Geothermal Alliance Bavaria	-	*National/Regional Funds*	2016-2020	11.50
		REPORTED DURING 2020 SETIS ANALYSIS Optimog	OPTIMOG	*National/Regional Funds*	2017-2020	0.90
		LEAP-RE Geothermal Atlas of Africa	Geothermal Atlas of Africa	*Other EU Funds*	from 01.21-12.23	-

		DGE-ROLLOUT - Roll-out of Deep Geothermal Energy in NWE	DGE-ROLLOUT	*Transnational Funds*	2018-2022	9.35
		Multidisciplinary and multi-context demonstration of EGS exploration and Exploitation Techniques and potentials	MEET	*Horizon 2020*	2018-2021	11.73
		Verbundvorhaben: SKEWS - Saisonaler Kristalliner Erdwärmesondenspeicher; Teilvorhaben: Demonstration der Machbarkeit und Evaluation mitteltiefer Erdwärmesondenspeicher	SKEWS	*National/Regional Funds*	2021-2024	2.92
		Verbundvorhaben: ArtemIS - Ausbau des Geothermischen Informationssystems GeotIS zum Internetportal für die Wärmewende in Deutschland; Teilvorhaben: Geowissenschaftliche Grundlagen, Regionale Reservoirprognose und Ausweisung mitteltiefer Potenziale zur Wärmenutzung und -speicherung	ArtemIS	*National/Regional Funds*	2021-2024	1.90
	Activity 7: Integration of geothermal heat and power in the energy system and grid flexibility	*REPORTED DURING SUPEERA FIRST YEAR ANALYSIS* Geothermische Fernwärmeversorgung in Berlin	GEOFERN	*National/Regional Funds*	07.19-06.22	1.81
		REPORTED DURING 2020 SETIS ANALYSIS GEOFOOD	GEOFOOD	*Transnational Funds*	2018-2021	1.70
		REPORTED DURING 2020 SETIS ANALYSIS HEATSTORE	HEATSTORE	*Transnational Funds*	2018-2021	16.30
		REPORTED DURING 2020 SETIS ANALYSIS CoolHeating	CoolHeating	*Other EU Funds*	2016-2018	1.60
		REPORTED DURING 2020 SETIS ANALYSIS GeoSmart	GeoSmart	*Other EU Funds*	2019-2023	19.70

		REPORTED DURING 2020 SETIS ANALYSIS RockStore (NO)	RockStore (NO)	*National/Regional Funds*	2018-2022	1.30
		DGE-ROLLOUT - Roll-out of Deep Geothermal Energy in NWE	DGE-ROLLOUT	*Transnational Funds*	2018-2022	9.35
		Verbundvorhaben: SKEWS - Saisonaler Kristalliner Erdwärmesondenspeicher; Teilvorhaben: Demonstration der Machbarkeit und Evaluation mitteltiefer Erdwärmesondenspeicher	SKEWS	*National/Regional Funds*	2021-2024	2.92
	Activity 8: Zero emissions power plants	*REPORTED DURING SUPEERA FIRST YEAR ANALYSIS* Geothermal Emission Gas Control	GECO	*Horizon 2020*	2018-2022	15.60
		REPORTED DURING 2020 SETIS ANALYSIS COSEISMIQ	COSEISMIQ	*Transnational Funds*	2018-2021	2.50
		REPORTED DURING 2020 SETIS ANALYSIS CARBFIX2	CARBFIX2	*Other EU Funds*	2017-2021	2.20
		REPORTED DURING 2020 SETIS ANALYSIS GEOENVI	GEOENVI	*Other EU Funds*	2018-2021	2.50
		REPORTED DURING 2020 SETIS ANALYSIS S4CE	S4CE	*Other EU Funds*	2017-2020	9.80
		REPORTED DURING 2020 SETIS ANALYSIS Injection CO2	-	*National/Regional Funds*	2018-2020	2.00
		REPORTED DURING 2020 SETIS ANALYSIS Pilot CO2 dis	-	*National/Regional Funds*	2016-2018	2.30
Offshore wind	**Activity 1: System Integration**	*REPORTED DURING 2020 SETIS ANALYSIS* Development of new critical structural elements of third generation wind towers	GRIGEN PROJECT	*National/Regional Funds*	-	1.53

		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Innovative tools for offshore wind and DC grids	InnoDC	*Horizon 2020*	09.17-08.21	3.89
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Green Island - Support of policies and provision for future needs	GREEN ISLAND-AiSratis	*National/Regional Funds*	03.17-06.22	8.50
		REALCOE	REALCOE	*Horizon 2020*	01.18-10.26	32.00
		sMArt Green Ports as Integrated Efficient multimodal hubs	MAGPIE	*Other EU Funds*	09.21/08/26	25.00
		Supports the implementation of the SET-Plan Implementation Plan for Offshore Wind	SETWIND	*Horizon 2020*	1.20/07.22	0.54
		Train2Wind	Train2Wind	*Horizon 2020*	2020-2024	4.00
		highly networked infrastructure for the design and analysis of new urban energy supply concepts	Urban Energy Lab	*National/Regional Funds*	07.18-12.21	6.00
		Winds of the North Sea in 2050	WINS50	National/Regional Funds	-	0.70
		European Scalable Complementary Offshore Renewable Energy Sources	EU-SCORES	*Horizon 2020*	-	35.00
		Designing and modelling future systems of energy systems	DEMOSES	National/Regional Funds	-	
	Activity 5: Wind Energy Industrialisation	*REPORTED DURING 2020 SETIS ANALYSIS* WindWeld	-	*National/Regional Funds*	-	1.20
		REPORTED DURING 2020 SETIS ANALYSIS Wave loads and soil support for extra large monopiles	-	*National/Regional Funds*	-	1.50
		WeldCast - welding technology that will enable assembly welding and repair welding of large-scale cast iron components in wind turbines	-	*Other*	2021 - 2024	3.50
		Additive manufacturing	-	*National/Regional Funds*	2021-2024	0.40

		AIOLOS - automatisation and digitalisation of blade production	AIOLOS	*National/Regional Funds*	2021-2024	10.00
		Fault diagnosis and fault tolerant control of of offshore wind farms (J.W. van Wingerden)	Watereye	*Horizon 2020*	11.2019-11.2022	4.71
		Corrosion Fatigue Life Optimisation (C-FLO)	C-FLO	*National/Regional Funds*	6.2019-5.2022	-
		Physical Modelling of Service Life Consumption by Pile Driving (EUROS)	-	-	-	-
		Smart Logistics for cost reduction of offshore wind farms (EUROS)	-	-	-	-
		X-shaped Radical Offshore wind Turbine for Overall cost of energy Reduction	XROTOR	*Horizon 2020*	01.01.2021-12.12.23	3.90
		Virtual 6 DoF load sensor for gear box input	V6loads	*National/Regional Funds*	09.18-03.22	1.20
		Test Rigs and test procedure for Wind Turbine gearbox bearings	Lagerzentrum	*National/Regional Funds*	11.16-10.21	3.00
		Dimensioning of high loaded blade bearings	HBDV	*National/Regional Funds*	09.18 -03.22	5.00
		Realtime WT Tower		*National/Regional Funds*	06.21-05.24	1.20
		NVH Transferpath Analysis for WTG Power trains	TraWin	*National/Regional Funds*	09.18-03.22	0.50
		NVH behaviour of a direct drive WTG	DynaWEA	*National/Regional Funds*	09.18-03-24	0.04
		Test cycles to determine the robustness of gearboxes for wind turbines	Gearbox Robustness	*National/Regional Funds*	10.17-10.21	1.00
		Gearbox live time oil lubrication	LEDASHWEA	*National/Regional Funds*	05.21-04.24	0.90
		Development of a design methodology for an innovative plain bearing concept for main bearings in wind turbines	FleX Pad	*National/Regional Funds*	11.19-10.22	1.90
		Improved design of wind turbine gearboxes by considering transient loads from different drive train concepts	DynaGet	*National/Regional Funds*	10.19-9.22	1.50

	Activity 8: Ecosystem and social impact	*REPORTED DURING 2020 SETIS ANALYSIS* Win-Wind: making offshore wind farms winning for society	Win-Wind	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS JIP ECO FRIEND	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Scour protection design for biodiversity enhancement in North Sea Offshore Wind Farms	-	*National/Regional Funds*	-	-
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS The Bluemed coordination and support action	BLUEMED	*Horizon 2020*	10.16-03.21	1.49
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS LIFE12 BIO/GR/000554 - Demonstration of good practices to minimize impacts of wind farms on biodiversity in Greece	WindFarms - Wildlife	*Other EU Funds*	10.13-12.21	0.89
		The case of wind turbine sound and politiciation	CO-green	*National/Regional Funds*	2021-2024	0.40
		Observatoire autonome pour la surveillance acoustique intégrée des impacts des énergies marines sur l'écosystème pélagique	ECHOSONDE BIS	*National/Regional Funds*	10.20-03.22	0.072
		Self sufficient energy supply of municipalities	ARKESE	*National/Regional Funds*	09.18-03.22	0.80
	Activity 9: Human Capital Agenda	*REPORTED DURING SUPEERA FIRST YEAR ANALYSIS* The Bluemed coordination and support action	BLUEMED	*Horizon 2020*	10.16-03.21	1.49
		Novel deSign, producTion and opEration aPproaches for floating WIND turbine farms	Step4WIND	*Horizon 2020*	04.2020-04.2024	2.76

		Advanc+C7:C41ed maintenance, lifetime extension and repowering of wind farms supported by advanced digital tools	WINDEXT	*Horizon 2020*	01.2020-01-2023	0.91
Ocean energy	**Activity 1.5: Installation, logistics and infrastructure**	-	-	-	-	-
	Activity 2.2: Creation of an EU insurance and guarantee fund to underwrite various project risks	Support to the Realisation of the Ocean Energy Implementation Plan of the SET-Plan (https://www.oceanset.eu/)	OceanSET	*Horizon 2020*	3/19-2/22	1.04
	Activity 3.1: Development of certification and standards to support the offshore renewable technology sector	-	-	-	-	-
	Activity 3.2: De-risking environmental consenting through an integrated programme of measures	-	-	-	-	-
Positive energy district	**Activity 3: PED Guides and Tools**	*REPORTED DURING 2020 SETIS ANALYSIS* Future Quarter - Way to an energy-plus quarter in Vienna, Austria	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Otto Wagner Quarter Plus, Austria	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Zukunftsquartier 2.0, Austria	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Urban Greening Innovation Lab, Austria	-	*National/Regional Funds*	-	-

		REPORTED DURING 2020 SETIS ANALYSIS Regional Smart Energy System Innovation Lab, Austria	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Digitization in the construction industry, Austria	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Voisin d'Energie, Belgium	-	*National/Regional Funds*	-	0.30
		REPORTED DURING 2020 SETIS ANALYSIS Retrofit/ENERGY buildings, Belgium	-	*National/Regional Funds*	-	2.50
		REPORTED DURING 2020 SETIS ANALYSIS Hybrid Energy System for Smart Commercial Buildings	-	*National/Regional Funds*	-	146.00
		REPORTED DURING 2020 SETIS ANALYSIS Research on the potential of hydrogen technologies for transformation of energy mix of Moravian-silesian region (MSK), low-carbon energy and development of low-emission mobility	-	*National/Regional Funds*	-	301.00
		REPORTED DURING 2020 SETIS ANALYSIS Energy System for Grids	-	*National/Regional Funds*	-	920.00
		REPORTED DURING 2020 SETIS ANALYSIS Analysis of the geothermal energy potential at medium and large depths in the Czech Republic on the basis of available data	-	*National/Regional Funds*	-	124.00
		REPORTED DURING 2020 SETIS ANALYSIS The Energy Collective, Denmark	-	*National/Regional Funds*	-	0.91

		REPORTED DURING 2020 SETIS ANALYSIS EnergyLab Nordhavn, Denmark	-	*National/Regional Funds*	-	8.64
		REPORTED DURING 2020 SETIS ANALYSIS EcoGrid 2.0, Denmark	-	*National/Regional Funds*	-	6.54
		REPORTED DURING 2020 SETIS ANALYSIS Smart Otaniemi, Finland	-	*National/Regional Funds*	-	3.30
		REPORTED DURING 2020 SETIS ANALYSIS Smart Energy Åland, Finland	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Espoo Positive Energy Districts, Finland	-	*National/Regional Funds*	-	3.00
		REPORTED DURING 2020 SETIS ANALYSIS SPARCS, Espoo	-	*Other EU Funds*	-	11.90
		REPORTED DURING 2020 SETIS ANALYSIS RESPONSE, Turku	-	*Other EU Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS ~50: Es_West_P2G2P; Pfaff; SmartQuart, Germany	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS SPARCS, Leipzig	-	*Other EU Funds*	-	11.90
		REPORTED DURING 2020 SETIS ANALYSIS Trans.Urban	-	*National/Regional Funds*	-	18.00
		REPORTED DURING 2020 SETIS ANALYSIS EnVisaGe-Plus	-	*National/Regional Funds*	-	0.60
		REPORTED DURING 2020 SETIS ANALYSIS En:Stadt Pfaff	-	*National/Regional Funds*	-	-

		REPORTED DURING 2020 SETIS ANALYSIS SmartQuart	-	*National/Regional Funds*	-	24.00
		REPORTED DURING 2020 SETIS ANALYSIS En:Stadt Es_West_P2G2P	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS +CityxChange, Limerick	-	*Other EU Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Sharing Cities, Milano, Italy	-	*Other EU Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Sinfonia, Bolzano, Italy	-	*Other EU Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Stardust, Trento, Italy	-	*Other EU Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Santa Chiara District, Trento, Italy	-	*Other EU Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS RdS Smart district	-	*National/Regional Funds*	-	4.20
		REPORTED DURING 2020 SETIS ANALYSIS RdS Smart cities and communities	-	*National/Regional Funds*	-	4.35
		REPORTED DURING 2020 SETIS ANALYSIS Casafabbra District, Parma, Italy	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Improvement of building energy efficiency technologies, Latvia	-	*National/Regional Funds*	-	0.18

		REPORTED DURING 2020 SETIS ANALYSIS Low temperature district heating for the Baltic sea region (pilot in town Gulbene, Latvia)	-	*Other EU Funds*	-	1.89
		REPORTED DURING 2020 SETIS ANALYSIS Flexible electricity use in households: barriers, opportunities and effects, Norway	-	*National/Regional Funds*	-	0.50
		REPORTED DURING 2020 SETIS ANALYSIS Methods for Transparent Energy Planning of Urban Building Stocks – ExPOSe. Norway-	-	*National/Regional Funds*	-	0.50
		REPORTED DURING 2020 SETIS ANALYSIS Syn.ikia sustainable plus energy neighbourhoods	-	*Other EU Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS "+CityxChange", Trondheim	-	*Other EU Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Pocityf, Évora	-	*Other EU Funds*	-	11.25
		REPORTED DURING 2020 SETIS ANALYSIS Atelier, Matosinhos	-	*Other EU Funds*	-	10.95
		REPORTED DURING 2020 SETIS ANALYSIS Smart-BEEjs	-	*Other EU Funds*	-	2.00
		REPORTED DURING 2020 SETIS ANALYSIS Laser Valley – Land of Lights, Magurele, County Ilfov, Romania	-	*National/Regional Funds*	-	-

		REPORTED DURING 2020 SETIS ANALYSIS Brunnshög, Lund Northeast/COOL-DH (H2020, IA) Sweden	-	*Other EU Funds*	-	2.65
		REPORTED DURING 2020 SETIS ANALYSIS Hunziker Areal – Zürich, Switzerland	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS «Quartier de l'Etang» Vernier, Switzerland	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Stöckacker – Bern, Switzerland	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Community-focused Energy Transition, The Netherlands	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Pocityf, Alkmaar	-	*Other EU Funds*	-	11.25
		REPORTED DURING 2020 SETIS ANALYSIS Programma Aardgasvrije Wijken (PAW) National Programme	-	*National/Regional Funds*	-	217.50
		REPORTED DURING 2020 SETIS ANALYSIS Purmerend Overwhere-Zuid (1 of the PAW pilots)	-	*National/Regional Funds*	-	3.50
		REPORTED DURING 2020 SETIS ANALYSIS Tytsjerksteradiel, Garyp (1 of the PAW pilots)	-	*National/Regional Funds*	-	2.80
		REPORTED DURING 2020 SETIS ANALYSIS Noordoostpolder, Nagele (1 of the PAW pilots)	-	*National/Regional Funds*	-	2.10

	Activity 4: PED Replication and Mainstreaming	*REPORTED DURING 2020 SETIS ANALYSIS* Future Quarter - Way to an energy-plus quarter in Vienna, Austria	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Otto Wagner Quarter Plus, Austria	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Zukunftsquartier 2.0, Austria	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Urban Greening Innovation Lab, Austria	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Regional Smart Energy System Innovation Lab, Austria	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Digitization in the construction industry, Austria	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Voisin d'Energie, Belgium	-	*National/Regional Funds*	-	0.30
		REPORTED DURING 2020 SETIS ANALYSIS Retrofit/ENERGY buildings, Belgium	-	*National/Regional Funds*	-	2.50
		REPORTED DURING 2020 SETIS ANALYSIS Hybrid Energy System for Smart Commercial Buildings	-	*National/Regional Funds*	-	146.00
		REPORTED DURING 2020 SETIS ANALYSIS Research on the potential of hydrogen technologies for transformation of energy mix of Moravian-silesian region (MSK), low-carbon energy and development of low-emission mobility	-	*National/Regional Funds*	-	301.00

		REPORTED DURING 2020 SETIS ANALYSIS Energy System for Grids	-	*National/Regional Funds*	-	920.00
		REPORTED DURING 2020 SETIS ANALYSIS Analysis of the geothermal energy potential at medium and large depths in the Czech Republic on the basis of available data	-	*National/Regional Funds*	-	124.00
		REPORTED DURING 2020 SETIS ANALYSIS The Energy Collective, Denmark	-	*National/Regional Funds*	-	0.91
		REPORTED DURING 2020 SETIS ANALYSIS EnergyLab Nordhavn, Denmark	-	*National/Regional Funds*	-	8.64
		REPORTED DURING 2020 SETIS ANALYSIS EcoGrid 2.0, Denmark	-	*National/Regional Funds*	-	6.54
		REPORTED DURING 2020 SETIS ANALYSIS Smart Otaniemi, Finland	-	*National/Regional Funds*	-	3.30
		REPORTED DURING 2020 SETIS ANALYSIS Smart Energy Åland, Finland	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Espoo Positive Energy Districts, Finland	-	*National/Regional Funds*	-	3.00
		REPORTED DURING 2020 SETIS ANALYSIS SPARCS, Espoo	-	*Other EU Funds*	-	11.90
		REPORTED DURING 2020 SETIS ANALYSIS RESPONSE, Turku	-	*Other EU Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS ~50: Es_West_P2G2P; Pfaff; SmartQuart, Germany	-	*National/Regional Funds*	-	-

		REPORTED DURING 2020 SETIS ANALYSIS SPARCS, Leipzig	-	*Other EU Funds*	-	11.90
		REPORTED DURING 2020 SETIS ANALYSIS Trans.Urban	-	*National/Regional Funds*	-	18.00
		REPORTED DURING 2020 SETIS ANALYSIS EnVisaGe-Plus	-	*National/Regional Funds*	-	0.60
		REPORTED DURING 2020 SETIS ANALYSIS En:Stadt Pfaff	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS SmartQuart	-	*National/Regional Funds*	-	24.00
		REPORTED DURING 2020 SETIS ANALYSIS En:Stadt Es_West_P2G2P	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS +CityxChange, Limerick	-	*Other EU Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Sharing Cities, Milano, Italy	-	*Other EU Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Sinfonia, Bolzano, Italy	-	*Other EU Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Stardust, Trento, Italy	-	*Other EU Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Santa Chiara District, Trento, Italy	-	*Other EU Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS RdS Smart district	-	*National/Regional Funds*	-	4.20

		REPORTED DURING 2020 SETIS ANALYSIS RdS Smart cities and communities	-	*National/Regional Funds*	-	4.35
		REPORTED DURING 2020 SETIS ANALYSIS Casafabbra District, Parma, Italy	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Improvement of building energy efficiency technologies, Latvia	-	*National/Regional Funds*	-	0.18
		REPORTED DURING 2020 SETIS ANALYSIS Low temperature district heating for the Baltic sea region (pilot in town Gulbene, Latvia)	-	*Other EU Funds*	-	1.89
		REPORTED DURING 2020 SETIS ANALYSIS Flexible electricity use in households: barriers, opportunities and effects, Norway	-	*National/Regional Funds*	-	0.50
		REPORTED DURING 2020 SETIS ANALYSIS Methods for Transparent Energy Planning of Urban Building Stocks – ExPOSe. Norway	-	*National/Regional Funds*	-	0.50
		REPORTED DURING 2020 SETIS ANALYSIS Syn.ikia sustainable plus energy neighbourhoods	-	*Other EU Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS "+CityxChange", Trondheim	-	*Other EU Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Pocityf, Évora	-	*Other EU Funds*	-	11.25
		REPORTED DURING 2020 SETIS ANALYSIS Atelier, Matosinhos	-	*Other EU Funds*	-	10.95

		REPORTED DURING 2020 SETIS ANALYSIS Smart-BEEjs	-	*Other EU Funds*	-	2.00
		REPORTED DURING 2020 SETIS ANALYSIS Laser Valley – Land of Lights, Magurele, County Ilfov, Romania	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Brunnshög, Lund Northeast/COOL-DH (H2020, IA) Sweden	-	*Other EU Funds*	-	2.65
		REPORTED DURING 2020 SETIS ANALYSIS Hunziker Areal – Zürich, Switzerland	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS «Quartier de l'Etang» Vernier, Switzerland	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Stöckacker – Bern, Switzerland	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Community-focused Energy Transition, The Netherlands	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Pocityf, Alkmaar	-	*Other EU Funds*	-	11.25
		REPORTED DURING 2020 SETIS ANALYSIS Programma Aardgasvrije Wijken (PAW) National Programme	-	*National/Regional Funds*	-	217.50
		REPORTED DURING 2020 SETIS ANALYSIS Purmerend Overwhere-Zuid (1 of the PAW pilots)	-	*National/Regional Funds*	-	3.50
		REPORTED DURING 2020 SETIS ANALYSIS	-	*National/Regional Funds*	-	2.80

		Tytsjerksteradiel, Garyp (1 of the PAW pilots)				
		REPORTED DURING 2020 SETIS ANALYSIS Noordoostpolder, Nagele (1 of the PAW pilots)	-	*National/Regional Funds*	-	2.10
		SPARCS, Kladno fellow city activities	SPARCS	*Horizon 2020*	10.19-09.24	23.85
		ARV, City of Karviná demo site	ARV	*Horizon 2020*	01.22-12.25	23.30
Energy efficiency for buildings	**Activity 4: Living Labs - Energy technologies and solutions for decarbonized European quarters and Cities**	*REPORTED DURING 2020 SETIS ANALYSIS* GrünStattGrau – Innovations for Greening Cities "The green living laboratory"	GrünStattGrau	*National/Regional Funds*	2017-2022	2.00
		REPORTED DURING 2020 SETIS ANALYSIS Circular South	Circular South	*Other EU Funds*	2017-	5.00
		REPORTED DURING 2020 SETIS ANALYSIS ROLECS	ROLECS	*National/Regional Funds*	2019-	5.50
		REPORTED DURING 2020 SETIS ANALYSIS RES4Build	RES4Build	*Other EU Funds*	2019-	5.00
		REPORTED DURING 2020 SETIS ANALYSIS NBERT Research Portal (National Building Energy Retrofit Testbed)	NBERT Research Portal	*National/Regional Funds*	2017-2018	0.04
		REPORTED DURING 2020 SETIS ANALYSIS Biomass Practitioner Register	-	*National/Regional Funds*	2018-2020	0.05
		REPORTED DURING 2020 SETIS ANALYSIS nZEB_101	-	*National/Regional Funds*	2018-2021	0.32
		REPORTED DURING 2020 SETIS ANALYSIS Enabling Smart Home Energy Responses (ESHER)	ESHER	*National/Regional Funds*	2020-	0.34

		REPORTED DURING 2020 SETIS ANALYSIS Energy renovation of traditional buildings - CPD roll out	-	*National/Regional Funds*	2019-	0.11
		REPORTED DURING 2020 SETIS ANALYSIS Digi Blocks	Digi Blocks	*National/Regional Funds*	2018-	0.42
		REPORTED DURING 2020 SETIS ANALYSIS Building upon Irelands National Renovation strategy	-	*National/Regional Funds*	2018-	0.12
		REPORTED DURING 2020 SETIS ANALYSIS Deep energy retrofit for Traditional Buildings: Assessing knowledge gaps and addressing skills training in Ireland	-	*National/Regional Funds*	2017-	0.04
		REPORTED DURING 2020 SETIS ANALYSIS Integrating the Tallaght Smart Energy Living Lab for Smart Grid and enerXchange Research	-	*National/Regional Funds*	2017-	0.06
		REPORTED DURING 2020 SETIS ANALYSIS eStore	eStore	*National/Regional Funds*	2017-	0.05
		REPORTED DURING 2020 SETIS ANALYSIS Trinty Smart Grid	-	*National/Regional Funds*	2018-	0.18
		REPORTED DURING 2020 SETIS ANALYSIS ThermoWell: Thermal Resource Extraction from a Standing Column Well	ThermoWell	*National/Regional Funds*	2020-	0.27
		REPORTED DURING 2020 SETIS ANALYSIS HIT SOLAR - Handle it locally - Renewable solution for generation of electricity, local heat and management of self-consumption in building	HIT SOLAR	*National/Regional Funds*	2018-2020	1.50

		REPORTED DURING 2020 SETIS ANALYSIS NZEB_LAB Research Infrastructure	-	*National/Regional Funds*	2017-2020	-
		Towards low carbon city districts through the improvement of regional policies	LC Districts	*Transnational Funds*	2019-2023	1.63
		PLUG-AND-USE RENOVATION WITH ADAPTABLE LIGHTWEIGHT SYSTEMS	PLURAL	*Horizon 2020*	2019-2024	9.75
		Highly advanced modular integration of insulation, energising and storage systems for non-residential buildings	POWERSKIN+	*Horizon 2020*	2020-2025	5.90
	Activity 7: Cost reduction and increase in efficiency of micro CHP/CCHP	*REPORTED DURING 2020 SETIS ANALYSIS* Energy2POG - Hybrid Energy Cluster Pogusch - Renewable energies and cost-efficient operation	Energy2POG	*National/Regional Funds*	2019-	0.30
		REPORTED DURING 2020 SETIS ANALYSIS Domestic CHP Field Trial - Demonstrating energy savings and environmental benefits in a real world context	Domestic CHP Field Trial	*National/Regional Funds*	2020-	0.15
		REPORTED DURING 2020 SETIS ANALYSIS Integrating the Tallaght Smart Energy Living Lab for Smart Grid and enerXchange Research	-	*National/Regional Funds*	2017-	0.06
		REPORTED DURING 2020 SETIS ANALYSIS Up scaling integrated Home Deep renovation services for Ireland (Superhomes2030)	Superhomes2030	*Other EU Funds*	2020-2023	0.94
		Power generation ICE directly cooled by ORC working fluid for complex WHR	-	National/Regional Funds	2019-2021	0.37

		Energy Efficiency Network – a cross-border energy consultant training	EEN	Other	2021-2023	0.32
		Optimised expanders for small-scale distributed energy systems	DEXPAND	*EEA/Norway Grants*	2020-2024	1.60
		Policies for Renewable Energy Sources in industry	RESINDUSTRY	*Transnational Funds*	2019-2023	1.60
Energy efficiency in industry	**Activity 1.3: Top Gas Recycling - Blast Furnace (TGR-BF) using plasma torch**	-	-	-	-	-
	Activity 3.4: Polygeneration (heat, cold, electrical power) and hybrid plants	*REPORTED DURING 2020 SETIS ANALYSIS* Novel SOFC-mGT hybrid systems for polygeneration (heat-cool-power-desalinated water) in Island systems	-	-	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Energy from waste with zero emissions	-	-	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Small steam boiler with combined cycle gas and steam turbines on multi fuels	-	-	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Capture energy out of high pressure waste steam in order to prepare the steam for absorption chiller use / integrated cooling and power plant	-	-	-	-
		REPORTED DURING 2020 SETIS ANALYSIS CO&CO2 free high efficiency metal industry using chemical and electrochemical water splitting	-	-	-	-
		Compressed Heat Energy Storage for Energy from Renewable sources	*CHESTER*	*Horizon 2020*	*04.18-03.23*	5.00
		The next tri-generation systems based on natural refrigerants heat pumps with multiple renewable sou	TRIHP	*Horizon 2020*	-	5.00

		HeAt PumPs in existing multi-family buildings for achieving union's ENergy and eNvironmental Goals	HAPENNING	*Horizon 2020*	-	3.00
		Reliable high power density converters	CONVADP	*National/Regional Funds*	-	0.35
		New generation Heat Pumps with low GWP	DOMUNALIA	*National/Regional Funds*	-	0.08
		Isolated 100% renewable enegy systems	ENERISLA	*National/Regional Funds*	-	1.00
	Activity 4.2: Non-conventional energy sources in process industry	-	-	-	-	-
Batteries	**Activity 1.3: Advancement of batteries for stationary energy storage**	*REPORTED DURING 2020 SETIS ANALYSIS* CoFBAT	CoFBAT	*Other EU Funds*	11.19-10.23	7.96
		REPORTED DURING 2020 SETIS ANALYSIS CompBat	CompBat	*Other EU Funds*	02.20-01.23	1.75
		REPORTED DURING 2020 SETIS ANALYSIS MELODY	MELODY	*Other EU Funds*	01.20-12.23	4.00
		REPORTED DURING 2020 SETIS ANALYSIS Alion	Alion	*Other EU Funds*	2015-2019	-
		REPORTED DURING 2020 SETIS ANALYSIS Sintbat	Sintbat	*Other EU Funds*	2016-2022	9.76
		REPORTED DURING 2020 SETIS ANALYSIS Cellulose Aluminium Polymer multi-ions composite Solid-electrolyte (CAPSEL)	CAPSEL	*Other EU Funds*	2018-	50.00
		Seawater battery for energy storage	SBAM	*National/Regional Funds*	2021-2024	2.18

		Progetto RSE di Ricerca di Sistema (RdS) "Sistemi di accumulo, compresi elettrochimico e power to gas, e relative interfacce con le reti" (RdS funded project "Storage systems, including electrochemical and power to gas, and related interfaces with networks")	-	*National/Regional Funds*	2019-2021	1.90
		Solstice	Solstice	*Horizon 2020*	01.20-12.23	7.70
		Progetto RSE di Ricerca di Sistema (RdS) "Tecnologie di Accumulo Elettrochimico e Termico" (RdS funded project "Electrochemical and thermal storage technologies")	-	*National/Regional Funds*	2022-2024	2.33
	Activity 1.4: Post-Li ion for e-mobility	*REPORTED DURING 2020 SETIS ANALYSIS* NAIMA	NAIMA	*Other EU Funds*	12.19-11.22	8.00
		REPORTED DURING 2020 SETIS ANALYSIS Alise	Alise	*Other EU Funds*	2015-2019	6.85
		REPORTED DURING 2020 SETIS ANALYSIS Helis	Helis	*Other EU Funds*	2015-2019	7.97
		REPORTED DURING 2020 SETIS ANALYSIS Lisa	Lisa	*Other EU Funds*	2019-2022	7.92
		REPORTED DURING 2020 SETIS ANALYSIS Development of solid electrolytes with ultra-high conductivity, and electrodes with improved cyclic stability for solid-state batteries (ICSI-4EE04)	ICSI-4EE04	*National/Regional Funds*	2019-	1.12
		REPORTED DURING 2020 SETIS ANALYSIS Carbon nanostructures obstained by chemical vapor deposition (CVD) for electrochemical devices (ICSI-4EE05)	ICSI-4EE05	*National/Regional Funds*	2019-	2.19

		REPORTED DURING 2020 SETIS ANALYSIS Implementing new storage technologies, NMC Lithium-ion, a major step towards the next generation of Magnesium-ion batteries (ICSI 4E01)	ICSI 4E01	*National/Regional Funds*	2018-	0.52
		REPORTED DURING 2020 SETIS ANALYSIS Development, testing and implementation of new nanostructured electrodes for Li-ion batteries (CLEAN ENLIFE01)	CLEAN ENLIFE01	*National/Regional Funds*	2017-	0.39
		Progetto RSE di Ricerca di Sistema (RdS) "Sistemi di accumulo, compresi elettrochimico e power to gas, e relative interfacce con le reti" (RdS funded project "Storage systems, including electrochemical and power to gas, and related interfaces with networks")	-	*National/Regional Funds*	2019-2021	1.90
		Progetto RSE di Ricerca di Sistema (RdS) "Tecnologie di Accumulo Elettrochimico e Termico" (RdS funded project "Electrochemical and thermal storage technologies")	-	*National/Regional Funds*	2022-2024	2.33
		Development of innovative materials for application in secondary sodium batteries	N/A	*Other*	10.2021 - 09.2022	0.01
		Interplay between structure, properties, relaxations and conductivity mechanism in new electrolytes for secondary Magnesium batteries	None	*Other*	08.2021 - 07.2024	0.19
		Towards sustainable, high-performing, all-solid-state sodium-ion batteries	TRUST	*National/Regional Funds*	04.2019 - 10.2022	1.10
		Battery2030+	Battery2030+	*Horizon 2020*	05.20-04.24	2.10
		Solidify	Solidify	*Horizon 2020*	01.20-12.23	7.80
		Versatile Ionomers for DIvalent CAlcium baTteries	VIDICAT	*Other EU Funds*	03.2019 - 08.2022	3.00

	Activity 2.1: Foster development of materials processing techniques and components for fast industrialization compatible with present mass production lines	*REPORTED DURING 2020 SETIS ANALYSIS* Flexible and Mobile Economic Processing Technologies (FAME)	FAME	*Other EU Funds*	2014-	7.46
		REPORTED DURING 2020 SETIS ANALYSIS Cellulose Aluminium Polymer multi-ions composite Solid-electrolyte (CAPSEL)	CAPSEL	*Other EU Funds*	2018-	50.00
		REPORTED DURING 2020 SETIS ANALYSIS Performant nanocomposites for Li-ion battery anodes based on Sn, Si, Genano alloys and Single Walled Carbon Nanohorns (SWCNHs) / Reduced Graphene Oxide (RGO) nanosheets (NANOTINSIGECARBOANOD)	-	*National/Regional Funds*	2020-	0.12
		REPORTED DURING 2020 SETIS ANALYSIS High performance Electrolytes Based on Polymer Gel and Ionic Liquid for Solid State Lithium-Metal Batteries (GeLiBAT)	GeLiBAT	*National/Regional Funds*	2020-	0.04
		REPORTED DURING 2020 SETIS ANALYSIS Development of solid electrolytes with ultra-high conductivity, and electrodes with improved cyclic stability for solid-state batteries (ICSI-4EE04)	ICSI-4EE04	*National/Regional Funds*	2019-	1.12
		REPORTED DURING 2020 SETIS ANALYSIS Development, testing and implementation of new nanostructured electrodes for Li-ion batteries (CLEAN ENLIFE01)	CLEAN ENLIFE01	*National/Regional Funds*	2017-	0.39

		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Storage systems, including electrochemical and power to gas, and related interfaces with networks	PTR19-21	*National/Regional Funds*	01.19-12.21	4.00
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS High-capacity 2D layered materials for Mg-ion batteries	2D-Mg	*Other EU Funds*	08.18-12.21	0.03
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS High-performance seawater magnesium batteries for marine application	SeaMag	*National/Regional Funds*	09.18-08.21	1.37
		Optimization of a process for the synthesis of LiPF6 for electrochemical applications	N/A	*Other*	04.2021 - 03.2024	0.24
		Hydra	Hydra		09.20- 09.24	4.70
		Sensibat	Sensibat		20-23	3.33
		SeNSE	SeNSE	*Horizon 2020*	02.20-01.24	10.30
		PROGRAMMA REGIONALE ATTIVITA' PRODUTTIVE 2012-2015-Sostegno allo sviluppo delle infrastrutture per la competitività e per il territorio-AMBIENTE ENERGIA MARE: POTENZIAMENTO E COMPLETAMENTO DEL CENTRO DI RICERCA DI MARINA DI RAVENNA	-	*National/Regional Funds*	2021	0.53
	Activity 2.2: Foster development of cell and battery manufacturing equipment	*REPORTED DURING 2020 SETIS ANALYSIS* SONAR	SONAR	*Other EU Funds*	01.20-12.23	2.82
		REPORTED DURING 2020 SETIS ANALYSIS Towards a safe, reliable and cost competitive transport sector in Europe (C2C-NewCap)	C2C-NewCap	*Other EU Funds*	2017-	0.05

		REPORTED DURING 2020 SETIS ANALYSIS Cellulose Aluminium Polymer multi-ions composite Solid-electrolyte (CAPSEL)	CAPSEL	*Other EU Funds*	2018-	50.00
		REPORTED DURING 2020 SETIS ANALYSIS High Performance Electrolytes Based on Polymer Gel and Ionic Liquid for Solid State Lithium-Metal Batteries (GeLiBAT)	GeLiBAT	*Other EU Funds*	2020-	0.04
		REPORTED DURING 2020 SETIS ANALYSIS Hybrid configuration Supercapacitor - Li-ion battery with mixed power and energy performances (ICSI-4EE03)	ICSI-4EE03	*National/Regional Funds*	2019-	2.05
		REPORTED DURING 2020 SETIS ANALYSIS Development, testing and implementation of new nanostructured electrodes for Li-ion batteries (CLEAN ENLIFE01)	CLEAN ENLIFE01	*National/Regional Funds*	2017-	0.39
		InnoSuisse Camelot	-	*National/Regional Funds*	04.19-12.21	-
		InnoSuisse Revolution21	-	*National/Regional Funds*	1.20-12.21	-
		InnoSuisse PVDforLIB	-	*National/Regional Funds*	5.20-4.22	-
		SFOE HiPerSonick	-	*National/Regional Funds*	7.18-6.22	4.90
		InnoSuisse CircuBat	-	*National/Regional Funds*	1.22-12.25	10.00
	Activity 3.1: Hybridation of battery systems for stationary energy storage (ESS)	*REPORTED DURING 2020 SETIS ANALYSIS* CUBER	CUBER	*Horizon 2020*	01.20-12.23	4.00
		REPORTED DURING 2020 SETIS ANALYSIS HIGREEW	HIGREEW	*Other EU Funds*	11.19-02.23	3.79

		REPORTED DURING 2020 SETIS ANALYSIS BALIHT	BALIHT	*Other EU Funds*	12.19-11.22	4.10
		REPORTED DURING 2020 SETIS ANALYSIS Hybrid power-energy electrodes for next generation litium-ion batteries (HYDRA)	HYDRA	*Other EU Funds*	2020-	4.70
		HyFlow: Development of a sustainable hybrid storage system based on high power vanadium redox flow battery and supercapacitor – technology	HYFLOW	-	11.20-10.23	3.99
		Progetto RSE di Ricerca di Sistema (RdS) "Sistemi di accumulo, compresi elettrochimico e power to gas, e relative interfacce con le reti" (RdS funded project "Storage systems, including electrochemical and power to gas, and related interfaces with networks")	-	*National/Regional Funds*	2019-2021	1.90
		Progetto RSE di Ricerca di Sistema (RdS) "Tecnologie di Accumulo Elettrochimico e Termico" (RdS funded project "Electrochemical and thermal storage technologies")	-	*National/Regional Funds*	2022-2024	2.33
		Hybrid Battery energy stoRage system for advanced grid and beHInd-de-meter	HYBRIS	*Horizon 2020*	01.21-12.23	3.99
		Innovative compact HYbrid electrical/thermal storage systems for low energy BUILDings	HYBUILD	*Horizon 2020*	01.18-03.22	5.99
		Storage Research Infrastructure Eco-System	StoRIES	*Horizon 2020*	11.2021-11.2025	7.00
Renewable fuels and bioenergy	**Activity 2: Demonstrate**	*REPORTED DURING SUPEERA FIRST YEAR ANALYSIS* Production of Bio-Oil and Energy from Wastes	-	*National/Regional Funds*	2.2021-12.2024	7.00

	advanced liquid and gaseous biofuels through biochemical / thermochemical / chemical conversion from sustainable biomass and/or from autotrophic microorganisms and primary renewable energy	*REPORTED DURING SUPEERA FIRST YEAR ANALYSIS* Hydrogen Production from Biomass Through Gasification	-	*National/Regional Funds*	02.2016-10.2020	0.41
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Liquid Fuel Production from Biomass and Coal Blends	TRIJEN	*National/Regional Funds*	06.2009-12.2020	10.45
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Refuels	-	*National/Regional Funds*	01.19 - 06.21	0.38
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS NextGen	-	*Horizon 2020*	11.18 - 10.22	0.67
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Market Uptake Support for Intermediate Bioenergy Carriers	MUSIC	*Horizon 2020*	09.19-08.22	3.00
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Optimierungs-Toolbox mit Kinetischer Numerischer Simulation	OpToKNuS	*National/Regional Funds*	01.20-12.22	-
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Flexibilisierung der Biomassevergasung durch Nutzung des Vergaserkokses als Biomaterial für die stoffliche Verwertung und als Brennstoff für Kleinstvergaser	VergaFlex	*National/Regional Funds*	10.19-03.22	-
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Thermo-chemische Konversion von Reststoffen in einem Vergaser-BHKW mit gekoppelter Aschegewinnung	GASASH	*National/Regional Funds*	09.18-08-20	-
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Neuartiges Verfahren zur Mono-Vergärung von Hühnertrockenkot	NovoHTK	*National/Regional Funds*	09.18-08.21	-

		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Forschungs- und Demonstrationsvorhaben | Bioressourcen und Wasserstoff zu Methan als Kraftstoff - Konzeptionierung und Realisierung einer Anlage im Pilotmaßstab	PILOTSBG	*Other*	11.18-12.21	9.10
		Biofuels Research Infrastructure (Coordinator KTH)	BRISK2	*Horizon 2020*	2017 - 2022	-
		Selectiveli: Concceptual Study of Electrochemical based novel process using lignosulfonates to produce bio-based monomes & Polymers (coordinator Univ. Mainz)	SelectiveLi	*Horizon 2020*	2019 -2023	0.63
		LIBERATE Converting Lignin into High Value Products (Coordinator Leitat)	LIBERATE	*Horizon 2020*	11/2018 - 12/2022	2.50
		4Refinery - Scenarios for Integration of bio-liquids in existing REFINERY Processes	4Refinery	*Horizon 2020*	5/2017 - 4/2021	1.48
		Pulp and Paper Industry Wastes to Fuel	Pulp and Fuel	*Horizon 2020*	10/2018 - 9/2022	1.23
		BESTER. Bioprocesses for the optimized, integrated production of butyl esters from sustainable resources (Coorindator, SINTEF)	BESTER	*Other EU Funds*	04.2018 - 06.2021	0.71
		Norwegian Center for sustainable Bio-based Fuels and Energy (Coordinator SINTEF, NMBU)	FME Bio4Fuels	*National/Regional Funds*	2017 - 2024	3.13
		PyroCO2 (Coordinator SINTEF)	PyroCO2	*Horizon 2020*	10.2021 - 11.2026	10.00
		Scarti organici e Anidride carbonica Trasformati in carbURanti, fertilizzanti e prodotti chimici; applicazione concreta dell'ecoNOmia circolare	SATURNO	*National/Regional Funds*	07.19	6.60
		Development of competitive, next generation biofuels from municipal solid waste	BioRen	*Horizon 2020*	11.18 – 10.22	4.97

		Olive mill wastewater: From a pollutant to green fuels, agricultural water source and bio-fertilizer	WASTE2FUEL	*Other*	08.17-08.21	0.56
		Move2LowC - Biobased Fuels	M2LC	*National/Regional Funds*	11.20-06.23	4.69
		OMEGAFUEL	OMEGAFUEL	*National/Regional Funds*	10.18-09.22	0.22
		GREENFUEL	GREENFUEL	*National/Regional Funds*	10.18-09-22	0.23
		Hydrothermal liquefaction: Enhanced performance and feedstock flexibility for efficient biofuel production	HYFLEX	*Horizon 2020*	10.17-09.21	5.04
		Hydrogen from biomass	BIO2HY	*National/Regional Funds*	04.2021-11.2021	0.16
		Biomethane and peat substitute from poplar wood	PaplGas	*National/Regional Funds*	04.19-06.21	0.27
		Biorefinery AustroCel Hallein		*Other*	2020 -	40.00
		Waste2Value	Waste2Value	*National/Regional Funds*	2019 - 2023	9.00
		Reststoff2Kraftstoff - Energieeffiziente Reststoffverwertung zur Erzeugung neuartiger erneuerbarer Kraftstoffe	-	*National/Regional Funds*	2021 - 2024	1.50
		Flexiwaste development of a flexible valorisation process of residues for the production of biofuels	Flexiwaste	*National/Regional Funds*	2019 - 2021	1.10
		Development of autonomous plants for the energetic valorization of residues and by-products derived from agricultural and/or forest activity in solid biofuels	-	*National/Regional Funds*	2019 - 2021	0.56
		Industrial co-processing of pyrolysis oil in a refinery	-	*National/Regional Funds*	2020 - 2022	2.45
		Integrated Biorefinery Concept for Bioeconomy Driven Development (INDEPENDANT)	-	*National/Regional Funds*	2019 - 2022	4.91

	Activity 3: Scale-up advanced liquid and gaseous biofuels through biochemical / thermochemical / chemical conversion from sustainable biomass and/or from autotrophic microorganisms and primary renewable energy	*REPORTED DURING SUPEERA FIRST YEAR ANALYSIS* Pilot plant for the catalytic methanation	GanyMeth	*National/Regional Funds*	01.17-06.21	1.90
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Fast pyrolysis and pyrolysis oils	-	*Other*	01.20.-12.20	0.16
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS bioliq: Synthesis	-	*Other*	01.20.-12.20	0.27
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS bioliq: Gasification	-	*Other*	01.20-12.20	0.56
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS bioliq: Pyrolysis	-	*Other*	01.20-12.20	0.05
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS BL2F	-	*Horizon 2020*	01.20 - 12.22	0.17
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS B4B Biorefinery for a bioeconomy in Baden-Württemberg	-	*Other*	10.18 - 12.20	0.07
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS FLEXI-Green Fuels	-	*Horizon 2020*	01.20 - 12.22	0.09
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Refuels	-	*National/Regional Funds*	01.19 - 06.21	0.89
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS NextGenRoadFuels	-	*Horizon 2020*	11.18 - 10.22	0.07
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Conversion: SCW	-	*Other*	01.20 - 12.20	0.02

		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Behandlung und kombinierter Einsatz von Stroh- und Getreideausputzmischungen für eine Biogas-Technologiekette mit Zukunft	KoSaTZ	*National/Regional Funds*	01.20-12.21	-
		REPORTED DURING SUPEERA FIRST YEAR ANALYSIS Optimierung des Betriebs und Design von Biogasanlagen für eine bedarfsgerechte, flexibilisierte und effiziente Biogasproduktion unter Berücksichtigung der Prozessstabilität als Post-EEG Strategie	OptiFlex	*National/Regional Funds*	10.17-09.20	1.68
		Biofuels Research Infrastructure (Coordinator KTH)	BRISK2	*Horizon 2020*	2017 - 2022	-
		Selectiveli: Concceptual Study of Electrochemical based novel process using lignosulfonates to produce bio-based monomes & Polymers (coordinator Univ. Mainz)	SelectiveLi	*Horizon 2020*	2019 -2023	0.63
		LIBERATE Converting Lignin into High Value Products (Coordinator Leitat)	LIBERATE	*Horizon 2020*	11/2018 - 12/2022	2.50
		4Refinery - Scenarios for Integration of bio-liquids in existing REFINERY Processes	4Refinery	*Horizon 2020*	5/2017 - 4/2021	1.48
		Pulp and Paper Industry Wastes to Fuel	Pulp and Fuel	*Horizon 2020*	10/2018 - 9/2022	1.23
		BESTER. Bioprocesses for the optimized, integrated production of butyl esters from sustainable resources (Coorindator, SINTEF)	BESTER	*Other EU Funds*	04.2018 - 06.2021	0.71
		Norwegian Center for sustainable Bio-based Fuels and Energy (Coordinator SINTEF, NMBU)	FME Bio4Fuels	*National/Regional Funds*	2017 - 2024	3.13
		PyroCO2 (Coordinator SINTEF)	PyroCO2	*Horizon 2020*	10.2021 - 11.2026	10.00
		Co-processing of vegetable oil		*Other*	-2025	-

	Activity 5: Demonstrate other renewable liquid and gaseous fuels (excluding hydrogen) through thermochemical / chemical / biochemical / electrochemical transformation of energy neutral carriers with renewable energy	Scarti organici e Anidride carbonica Trasformati in carbURanti, fertilizzanti e prodotti chimici; applicazione concreta dell'ecoNOmia circolare	SATURNO	*National/Regional Funds*	07.19	6.60
		Combined suN-Driven Oxidation and CO2 Reduction for renewable energy storage	CONDOR	*Horizon 2020*	11.2020-11.2024	3.95
		Research initiative aiming to become a large Euroepan Research and Innovation initiative towards production of fossil-free fuels and chemicals	SUNERGY	*Other EU Funds*	2020-now	-
		COOPILOT BIOGMT	COOPILOT BIOGMT	*National/Regional Funds*	2020 -	0.09
		VERENA - Vergasungsprozesse mit integrierter Überschussstromeinbindung zur flexiblen Stromerzeugung und Herstellung synthetischer Energieträger aus Reststoffen	VERENA	*National/Regional Funds*	2020 - 2024	11.10
		ProBioLNG: Innovative Prozesskette zur ressourceneffizienten Erzeugung von Bio-LNG -Entwicklung einer ressourcen- und kosteneffizienten Prozesskette zur dezentralen Produktion von LNG auf der Basis innovativer Konversions-, Power-to-Gas- und Gasaufbereitungsverfahren	ProBioLNG	*National/Regional Funds*	2019 - 2022	4.30
		Pilot-SBG	Pilot-SBG	*National/Regional Funds*	2018 - 2021	10.66
		Biofuels Research Infrastructure (Coordinator KTH)	BRISK2	*Horizon 2020*	2017 - 2022	-
		Selectiveli: Concceptual Study of Electrochemical based novel process using lignosulfonates to produce bio-based monomes & Polymers (coordinator Univ. Mainz)	SelectiveLi	*Horizon 2020*	2019 -2023	0.63
		LIBERATE Converting Lignin into High Value Products (Coordinator Leitat)	LIBERATE	*Horizon 2020*	11/2018 - 12/2022	2.50

		4Refinery - Scenarios for Integration of bio-liquids in existing REFINERY Processes	4Refinery	*Horizon 2020*	5/2017 - 4/2021	1.48
		Pulp and Paper Industry Wastes to Fuel	Pulp and Fuel	*Horizon 2020*	10/2018 - 9/2022	1.23
		BESTER. Bioprocesses for the optimized, integrated production of butyl esters from sustainable resources (Coorindator, SINTEF)	BESTER	*Other EU Funds*	04.2018 - 06.2021	0.71
		Norwegian Center for sustainable Bio-based Fuels and Energy (Coordinator SINTEF, NMBU)	FME Bio4Fuels	*National/Regional Funds*	2017 - 2024	3.13
		PyroCO2 (Coordinator SINTEF)	PyroCO2	*Horizon 2020*	10.2021 - 11.2026	10.00
		Carbon2Chem-2L4: C2+ Alkohole, C2+ Olefine		*National/Regional Funds*	2020 - 2024	75.00
	Activity 6: Scale-up other renewable liquid and gaseous fuels (excluding hydrogen) through thermochemical / chemical / biochemical / electrochemical transformation of energy neutral carriers with renewable energy	Columbus	Columbus	*Other EU Funds*	1.22-1.32	-
		North Sea Methanol	NCM	*Other EU Funds*	1.22-1.32	-
		Biofuels Research Infrastructure (Coordinator KTH)	BRISK2	*Horizon 2020*	2017 - 2022	-
		Selectiveli: Concceptual Study of Electrochemical based novel process using lignosulfonates to produce bio-based monomes & Polymers (coordinator Univ. Mainz)	SelectiveLi	*Horizon 2020*	2019 -2023	0.63
		LIBERATE Converting Lignin into High Value Products (Coordinator Leitat)	LIBERATE	*Horizon 2020*	11/2018 - 12/2022	2.50
		4Refinery - Scenarios for Integration of bio-liquids in existing REFINERY Processes	4Refinery	*Horizon 2020*	5/2017 - 4/2021	1.48
		Pulp and Paper Industry Wastes to Fuel	Pulp and Fuel	*Horizon 2020*	10/2018 - 9/2022	1.23
		BESTER. Bioprocesses for the optimized, integrated production of butyl esters from sustainable resources (Coorindator, SINTEF)	BESTER	*Other EU Funds*	04.2018 - 06.2021	0.71

		Norwegian Center for sustainable Bio-based Fuels and Energy (Coordinator SINTEF, NMBU)	FME Bio4Fuels	*National/Regional Funds*	2017 - 2024	3.13
		PyroCO2 (Coordinator SINTEF)	PyroCO2	*Horizon 2020*	10.2021 - 11.2026	10.00
	Activity 8: Develop high efficiency large scale biomass cogeneration of heat and power	Thermo-chemical conversion of agricultural residues in a gasification-CHP-plant with coupled ash utilization	GASASH	*National/Regional Funds*	09/2918-12/21	1.06
		Contributing to an Enhanced Flexibility of Biomass Gasification Plants by Utilization Options for Gasification Char	VERGFLEX	*National/Regional Funds*	10/2019 - 03/2023	0.60
		Value-optimised use of biomass in a flexible energy infrastructure	VABIFLEX	*Horizon 2020*	09.18-07.21	2.69
		Development and demonstration of an innovative hybrid ecological power plant for the coupling of Bioenergy with geothermal energy to supply different customer structures	Bio2Geo	*National/Regional Funds*	10.18-09.21	1.98
		Advanced biomass CCHP based on gasification, SOFC and cooling machines	BIOCCHP	*National/Regional Funds*	2018 - 2021	0,72
		HEATflex Development of a common technical & economic strategy to increase the competitiveness of CHP & district heating plants	HEATflex	*National/Regional Funds*	2019 - 2022	0.78
		ZeroEm-HiEffBioHeat Entwicklung eines Brennstoff-flexiblen Zero-Emission Biomasse-Brennwertkessels		*National/Regional Funds*	2018 - 2021	1.61
		LowEmi - MicroStove Entwicklung eines neuen, kostengünstigen und emissionsarmen Pelletkaminofens mit hochmoderner Regelung		*National/Regional Funds*	2019 - 2021	0.81
		TTCOGEN	TTCOGEN	*National/Regional Funds*	2020 -	0.57
		Boiler development	-	*National/Regional Funds*	2020 -	0.22

		Cost price reduction of bioenergy through Chemical Free Ammonium Recovery	-	*National/Regional Funds*	2019 - 2023	1.98
		Swedish Gasification Center		*National/Regional Funds*	2017 - 2021	22.70
		Oil replacement biomass heating	OBEN	*National/Regional Funds*	09.19-28.02.23	0.38
	Activity 10: Scale-up high efficiency large scale biomass cogeneration of heat and power	Cost-effective transformation of a Highly-Efficient, Advanced, Thermal Ultra-SuperCritical coal-fired power plant into a CHP by retrofitting and integrating an ARBAFLAME biomass upgrading process.	ARBAHEAT	*Horizon 2020*	10.18-09.22	26.00
		Bioenergy retrofits for Europe´s industry	BIOFIT	*Horizon 2020*	10.18-03.22	2.60
		DAnkEE	DAnkEE	*National/Regional Funds*	2018 - 2021	0.38
	Activity 12: Demonstrate solid, liquid and gaseous intermediate bioenergy carriers through biochemical / thermochemical / chemical conversion from sustainable biomass	Options for an efficient usage of solid biofuels in decarbonized heating grids	BioGrid	*National/Regional Funds*	09.19-08.22	0.63
		End-of-waste property of untreated woody residues through treatment processes and quality assurance	AbfallE	*National/Regional Funds*	11.19-.04.22	0.57
		Development of an integrated process for the carbonization of sewage sludge, production of biogas, and recovery of phosphorus	CarBiPho	*National/Regional Funds*	07.18-06.2021	0.65
		Conversion of water and carbohydrate containing residues of biomass processing into chemicals and fuel components using hydrothermal processes	HTKkChem	*National/Regional Funds*	11.18-12.21	0.94
		Demonstrate Biopellet productie procedé		*National/Regional Funds*	2017 - 2021	5.55
		Alkaliboost	Alkaliboost	*National/Regional Funds*	2019 - 2023	1.00
		Industrial co-processing of pyrolysis oil in a refinery		*National/Regional Funds*	2020 - 2022	2.45

		Thermo-chemical conversion of silicon rich biomass residues for the production of heat and power, and the combined generation of mesoporous biogenic silica for material application (A+BiOx)	A+BiOx	*National/Regional Funds*	01.20-12.22	0.19
	Activity 13: Scale-up solid, liquid and gaseous intermediate bioenergy carriers through biochemical / thermochemical / chemical conversion from sustainable biomass	-	-	-	-	-
Carbon capture utilisation and storage	**Activity 1: Delivery of a whole chain CCS project operating in the power sector**	*REPORTED DURING 2020 SETIS ANALYSIS* Drax Bioenergy & CCS	-	*National/Regional Funds*	-	5.50
		REPORTED DURING 2020 SETIS ANALYSIS ERVIA CCUS	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Fortum WtE Plant	-	*National/Regional Funds*	-	-
		REPORTED DURING 2020 SETIS ANALYSIS Norcem	-	*National/Regional Funds*	-	-
	Activity 4: Establish a European CO2 Storage Atlas	-	-	-	-	-
	Activity 5: Unlocking European Storage capacity	*REPORTED DURING 2020 SETIS ANALYSIS* ENOS	ENOS	*Horizon 2020*	-	12.50

ANNEX 3 – CONSOLIDATED DATA FOR ALL THE IPS

Implementation plan	Total reported competitive funding *(received by all projects consortia members, in € million)*	Amount of competitive funding going to EERA members *(in € million)*	Total reported institutional funding *(in € million)*	PM supported by competitive funding *(2021)*	PM supported by institutional funding *(2021)*	Total reported infrastructures
Concentrated solar power	19	1	0	0.00	0.00	14
Photovoltaic	40	3	1	243.50	90.00	4
Geothermal	286	22	5	414.00	0.00	144
Offshore wind	164	15	52	1102.00	0.00	1591
Ocean energy	1	0	0	18.00	2.00	0
Positive energy district	3764	2	0	91.00	0.00	0
Energy efficiency for buildings	44	2	0	490.00	0.00	0
Energy efficiency in industry	14	0	0	293.00	0.00	3
Batteries	337	43	19	1579.50	2413.00	1002
Renewable fuels and bioenergy	381	57	32	2509.82	1772,40	725
Carbon capture utilisation and storage	18	0	0	0.00	0.00	1
Total	5066	145	109	6740.82	4277.40	3484

ANNEX 4 – CONSOLIDATED DATA FOR THE 3 FURTHER ANALYSED IPS

Implementation plan	Activity number	Number of projects	Competitive funding *(in € million)*	Institutional funding *(in € million)*	PM supported by competitive funding *(2021)*	PM supported by institutional funding *(2021)*	Infrastructures
Renewable fuels and bioenergy	2	35	127.97	29,54	827.52	1772.40	553
	3	22	25.58	2.00	443.10	0.00	62
	5	16	131.36	0.00	544.10	0.00	0
	6	10	19.66	0.00	443.10	0.00	11
	8	13	35.02	0.00	92.80	0.00	18
	10	3	28.98	0.00	80.00	0.00	0
	12	8	11.98	0.00	79.20	0.00	51
	13	0	0.00	0.00	0.00	0.00	39
	Total	107	380.55	31.54	2509.82	1772.40	734
Batteries	1.3	10	87.57	4.45	253.33	608.00	217
	1.4	16	53.39	7.29	387.33	1145.00	279
	2.1	14	83.09	4.00	271.50	480.00	165
	2.2	11	70.25	2.50	318.00	120.00	192
	3.1	10	37.80	0.60	349.33	60.00	158
	Total	61	332.10	18.84	1579.49	2413.00	1011
Offshore wind	1	11	117.16	11.10	366.00	0.00	517
	5	20	41.45	39.50	663.00	0.00	568
	8	8	3.66	1.50	73.00	0.00	506
	9	3	5.17	0.00	0.00	0.00	0
	Total	42	167.44	52.10	1102.00	0.00	1591

ANNEX 5 – LIST OF KEY CONCEPTS USED IN THE SURVEY

Key Concept	Definition
Budget received by EERA members	The portion of the total project budged received by the EERA Member as part of the project consortium.
Competitive Funding	Public funding allocated through competitive programmes and calls from funding bodies (for example EU or national calls).
EERA Joint Programme	Technology-based programmes created to organise work within EERA and realise its strategy. The topics of the EERA Joint Programmes are aligned with the EU SET Plan.
European Funding	Public competitive funding coming from programmes established by the European Union such as the Horizon 2020 framework programme that are allocated and managed directly by the European Institutions
Full Time Equivalent	Unit of measure that indicates the equivalent of one-person working full time on a project on a yearly basis.
Human Effort / Person Month (PM)	Human effort (in person-months, or PM) is the metric for the time (effort) that the key personnel of an organisation devotes to a specific project, in a 12 months-time.
Implementation Working Groups	Working groups formed by interested SET Plan countries representatives and industrial and research stakeholders in order to execute the Research and Innovation activities presented in the Implementation Plans.
Institutional Funding	Resources at the disposal of an organisation or resources directly granted by/received from a governmental body/ies (Ministries, funding agencies etc), without any competition.

National/Regional Funding	Public Competitive Funding coming from national or regional programmes, allocated and managed from national or regional bodies. E.g. ERDF & Cohesion Funds.
“Red” or “Orange” IPs Activities	“Red” activities of the SET Plan IPs are those activities, which, in SETIS’ second progress assessment report (2020), were identified as not being supported by any ongoing projects; whereas “orange” activities were reported as being supported by a few ongoing projects, or as needing additional efforts to take-off.
Research Infrastructures	Relevant infrastructures that can be mobilised for the execution of one or more activities. EERA members were asked to mention only the infrastructures that are essential for the realisation of the activities.
SET Plan Implementation Plans	Implementation plans developed to facilitate the achievement of the technology-base targets envisioned by the SET Plan.
Transnational Funding	Public Competitive Funding coming from programmes developed through the collaboration of two or more European countries. (e.g. Interreg)