

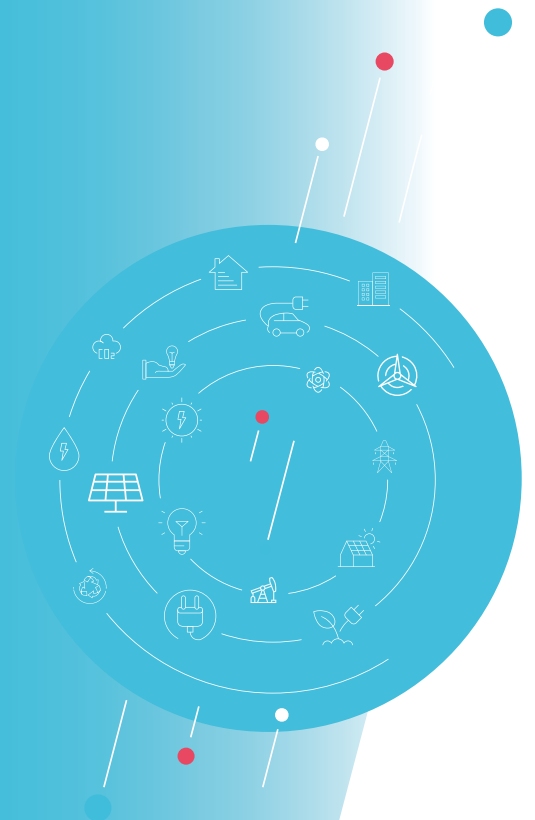
INTEGRATED SET PLAN

SET Plan Action 6 NETWORKING EVENT

Cooperation and Funding on Energy Efficiency in Industry

4 December 2019,

Thon Hotel EU, Brussels



Executive summary

Objectives of the event

The SET Plan Action 6 networking event took place on 4th December 2019 in Brussels. It was organised by DG Energy and run by the SET Plan Action 6 Secretariat (managed by Ecorys, Ricardo and CEPS). The event focused on cooperation and finance for making European industry less energy, resources and emissions intensive and more competitive, specifically in the sectors of steel production, chemicals, heat and cold technologies and system integration. Building on the workshop of June 2018, the event aimed to give a boost to the implementation of SET Plan Action 6 through:

Cooperation:

- Enabling dialogue between European countries, the industry, research institutions, and the European Commission;
- Enabling project ideas to mature and get implemented;

Finance:

- Providing information on European and national financial instruments ;
- Providing one-on-one consultations on financial opportunities.

The event started with keynote speeches on combining funding, along with an update on SET Plan Action 6 activities. The remainder of the morning session was then dedicated to inform participants on finance opportunities at EU level (i.e. presentations by DG Clima focusing on Innovation Fund, EIB and IPCEI) and to provide different views on cooperation and funding through an interactive panel discussion.

In the afternoon, two parallel Living Labs were organised: one on Steel and Chemicals and the other on Heat & Cold and System integration. Projects were presented as introduction to the exchange among participants on what are the common barriers towards project implementation and funding and on what are possible recommendations to overcome such obstacles. The outcomes of the discussion were then presented in a plenary session following the Living Labs activities. The networking event was then closed by Timo Rittonummi, Chair of Implementation Working Group (IWG6) and Eric Lecomte, DG Energy.

During the event participants were also given the opportunity to participate in individual one-to-one consultations with members of the SET Plan Action 6 Secretariat and National and European funding agencies to gather information on different financing programmes.

Main Outcomes

From the presentations and discussions, stakeholders have provided a number of valuable key messages and recommendations. The importance of the **combination and sequencing of funding** drew widespread consensus among stakeholders. Looking at the wide spectrum of available financing instruments at both EU and national level, it emerged the need to have **more clarity on the possibility for synergies and sequencing of the different instruments**. Major hurdles for industry stakeholders lay in the **complexity of the setting of the different funding sources**, such as the diverging eligible funding gaps and eligibility criteria, as well as the different timing. Industry stakeholders urge the responsible authorities of the funding instruments to address **a number of outstanding questions**: what are the funding gaps e.g. between the IPCEI and the Innovation Fund? How to combine the different funding sources? What are the possibilities for top-up? Up to which limit is considered acceptable for the EU or national governments? How can sequencing of the different financing sources be ensured?

Industry stakeholders have highlighted a number of common barriers and recommendations to ease projects implementation and funding. **Recognition of risks taken, risk-sharing and financial support from the public sector** are of paramount importance to support business development and incentivise investments. Due to the high level of risk related to innovative projects, grants could represent the best support instrument.

Having appropriate framework conditions is key. Ensuring a **level playing field** for products sold in the EU will be crucial in order to make sure that European Economy remain competitive. The European Commission is urged to use appropriate policy instruments (e.g. carbon border adjustment) to guarantee that products sold on the EU market have a similar CO2 constraint. Until such instruments are put in place, currently available EU/national funding sources should be used to cover the financing gap and make sure investments are made in the coming years to meet the targets set for 2030.

Ensuring the **availability of energy at a competitive price and having the necessary infrastructure in place** are needed to make a business case and compete at both European and global scale. Ensuring competitive prices for energy will be a crucial action also to reduce the financing gap and complement the available funding sources.

Moving towards a **one-shop-stop principle** for funding is seen as desirable, for example to help companies identify the most appropriate funding instruments and advise them on how to combine the different funding streams.

Stakeholders also called for a more stable regulatory environment. More **stability of rules and long-term planning that can go beyond the policy cycle** are seen as desirable.

More alignment between different national financing schemes would ease bilateral or multilateral cooperation. The different timelines of the calls and the different application procedures hinder the possibilities of combining funds from several member countries and challenge the ability of beneficiaries to coordinate the different stages of their application procedure and to engage in cross-border cooperation. **The national financing schemes of some member countries should become more flexible** by having calls that are constantly open for proposals. Aligning the timelines between the calls of different member countries could represent a central driver in securing funding for transnational research and innovation projects. **Industry stakeholders furthermore expressed a preference for a one-step application procedure** in order to limit the time and resources used to prepare proposals.

According to the national experiences reported by participants, EUREKA could play a key role in improving companies' network with other countries and selecting valuable partners.

The Commission was urged by stakeholders to assist member countries in their coordination of funds under an EU umbrella initiative. In this respect, *Co-fund Public Private Partnership* similar to ERA-NET will be established under Horizon Europe and SET Plan Action 6 activities will be able to receive funding under the area of "clean energy transition".

It will be up to the member countries themselves to determine the specific activities they wish to fund. The survey mapping the interest of stakeholders carried out as part of the Action 6 activities may help member countries to identify such topics. In addition to the survey results, industry and research stakeholders suggested to draft a one-page document on relevant technologies that can inform member countries officials on R&I needs and to have a roundtable with EC and member countries at the next Action 6 event.

It was also acknowledged the **key role of society**, intended as the general public, and the need of its commitment for the transition towards "cleaner" energy.

Finally, **Pulp & Paper and Cement** were identified by stakeholders as additional sectors that could contribute to SET Plan Action 6. Future activities were also addressed during the event and will be a basis for discussion in the next Working Group meetings.

Agenda

9.00-10.00	Registration
9.00-10.00 13.00-14.00 17.00-18.00	Consultations on financing in 20 countries & EU funds The SET Plan Action 6 Secretariat made an inventory of the EU and national financing opportunities for energy efficiency in industry in 20 countries. You can talk to experts from the Secretariat who made the inventory and also several funding agencies will be present to inform you on the focus of their programmes. You can also pre-book a max 15 minute consultation in the registration form. <small>SET Plan Action 6 Secretariat and Funding Agencies</small>
10.00-10.30	Opening Update SET Plan and Action 6, <small>Timo Ritonummi, Chair of SET Plan Action 6 and Deputy Director General in Energy Department of Ministry of Economic Affairs and Employment, Finland</small> Priorities of the new Commission: Green Deal and EU industrial policy <small>Haitze Siemers, Head of unit C2, DG Energy, European Commission</small>
10.30-11.10	Keynote speeches on combining funding Experiences with implementing the Berlin Model (combined funding from different countries), <small>Mattias Andersson, Senior Executive Officer, Technical University of Denmark</small> Trilateral Strategy Innovation Table <small>Lia Voermans, Strategy Innovation Director, Brightland Chemelot Campus</small>
11.10-11.30	Implementing SET Plan Action 6: Needs and demands from stakeholders Insight in needs and demands from stakeholders: results from the survey <small>Eugenia Bonifazi, Principal Consultant, Ricardo, SET Plan Action 6 Secretariat</small>
11.30-13.00	Implementing SET Plan Action 6: Inspiration on finance opportunities for cooperation Overview of the available funding opportunities of the member countries based on research done <small>by Chris Nuttall, Senior Consultant, Ricardo, SET Plan Action 6 Secretariat</small> Innovation Fund: Driving clean innovative technologies towards the market <small>Roman Doubrava, Deputy Head of Unit C3 Land use and Finance for Innovation, DG for Climate Action, European Commission</small> EIB support to energy demonstration and low-carbon industry projects <small>Marc Tonteling, Industry Expert, Advanced Materials Division, EIB</small> IPCEI possibilities for funding <small>Jyri Ylkanen, Policy Officer, DG Grow, European Commission</small>

Panel Discussion

Moderated by Jan-Maarten de Vet, Director, Ecorys, SET Plan Action 6 Secretariat:

- Haitze Siemers, European Commission
- Lia Voermans, Brightland Chemelot Campus
- Duncan Akporiaye, Research Director, SINTEF
- Elvira Lutter, Program and Research Manager, Austrian Climate and Energy Fund

13.00-14.00

Consultations on financing in 20 countries & EU funds

13.00-14.00

Lunch

14.00-15.30

Living labs: implementation and funding of projects on making EU industry less energy intensive and more competitive systems

In three separate rooms, presentation of a project and discussion in small groups on cooperation and finance related to:

Chemical & steel

Moderated by Jean Theo Ghenda, Director Technologies, EUROFER, with SET Plan Action 6 Secretariat

- SIDERWIN presented by Hervé Lavelaine, Coordinator of the SIDERWIN project, ArcelorMittal
- Thyssenkrupp's transformation strategy towards 2050 by Bianca Prado, Thyssenkrupp Steel Europe AG

Heat & Cold / System integration

Moderated by Ugo Simeoni, Research and Innovation Manager, ETN Global, with SET Plan Action 6 Secretariat and by Ludo Diels, A.Spire, with SET Plan Action 6 Secretariat

- Waste Heat to Power sCO₂ cycles presented by Marco Ruggiero, External Funding & Technology Development, Baker Hughes; and Olaf Bernstrauch, Technology and Innovation Manager, Siemens
- Polygeneration system for the small scale industry presented by Maija Mäkinen, Project Manager, Aurelia Turbines

15.30-16.00

Coffee break

16.00-16.40

Concluding on the living labs

Lessons, tips and hints for cooperation and finance on improving energy efficiency in industry

Moderated by moderators of the living labs

16.40-17.15

Moving forward with implementing SET Plan Action 6

How to move forward with the SET Plan Action 6

Moderated by Marie-Jose Zondag, Ecorys, SET Plan Action 6 Secretariat

16.40-17.15

Closure session

Conclusions by

Eric Lecomte, Policy Officer C2 New energy technologies, innovation and clean coal, DG Energy, European Commission

Timo Ritonummi, Chair of SET Plan Action 6 and Deputy Director General in Energy Department of Ministry of Economic Affairs and Employment, Finland

17.00-18.00

Consultations on financing in 20 countries & EU funds

17.30-19.00

Networking & drinks

Detailed minutes of the sessions

Opening

Timo Ritonummi, Chair of SET Plan Action 6 and Deputy Director General in Energy Department of Ministry of Economic Affairs and Employment, Finland

Haitze Siemers, Head of unit C2, DG Energy, European Commission

The morning sessions were moderated by Jan Maarten de Vet, Director at Ecorys and part of the SET Plan Action 6 Secretariat. Timo Ritonummi opened the day by reminding the participants that this event aims to further develop the project ideas collected at the workshop of June 2018 by identifying opportunities for cooperation and funding. To this end, Mr Ritonummi urged the industry, research and national representatives to actively engage in the discussions throughout the event.

Haitze Siemers delivered an opening speech in which he complemented the Action 6 Implementation Working Group (IWG6) for the active engagement of all stakeholder groups. Apart from the focus on funding opportunities, Mr Siemers explained that future discussion may have to explore regulatory barriers and the engagement of other relevant stakeholders in order to reach carbon-neutrality by 2050.

Experiences with implementing the Berlin Model (combined funding from different countries)

Mattias Andersson, Senior Executive Officer, Technical University of Denmark

Mattias Andersson highlighted the synergies that the ReliaBlade project was able to create as one of the key advantages of cross-border cooperation. In contrast, the project encountered barriers related to national funding agencies' concerns on potential loss of competitiveness and on the accountability towards projects where funding from the cooperating country has not yet been assured. Based on these experiences, three lessons were presented: (i) *Don't ask anyone to change anything*, i.e. operate within the rules already laid out by the national funding agencies; (ii) *embrace incrementalism*, i.e. set realistic targets and measure your success against these; and (iii) *celebrate your small victories*, i.e. using the Berlin model will require a step by step approach where every little achievement ought to be acknowledged.

Trilateral Region Innovation Table: Towards a circular & carbon neutral competitive chemical industry cluster

Lia Voermans, Strategy Innovation Director, Brightland Chemelot Campus

Lia Voermans delivered a presentation on the Trilateral Region, which is a cross-border cooperation project between the Netherlands, Flanders and North Rhine-Westphalia and aims to support the transition towards a circular and carbon neutral industry by 2050. To reach this transition, Ms Voermans emphasised the importance of a bottom-up approach, where the industry focuses on the fundamental research and contributes with a large part of the investment themselves.

Ms Voermans mentioned several advantages to the collaborative innovation programme: (i) the programme allows industry to address more technologies and select the best possible option; (ii) it enables participants to share costs and risks; (iii) it allows the acceleration and de-risking of scaling up through knowledge sharing; (iv) it allows the industry to have a shared voice on a European and national level; (v) it enables companies to jointly address the barriers of cross-border innovation; (vi) it allows for the identification of shared future needs; and (vii) it allows the industry to gain a competitive edge through the development of sustainable business and technology on the global market.

Implementing SET Plan Action 6: Needs and demands from stakeholders

Eugenia Bonifazi, Principal Consultant, Ricardo, SET Plan Action 6 Secretariat

The aim of the survey is to map the interest of industry and research stakeholders in the Action 6 areas in order to foster cross-cooperation. In total, 99 responses have been entered from 88 unique organisations. The cross-cutting areas of Heat & Cold and Systems have received the most interest. Despite significant increase in responses since the IWG6 Working Group on October 10, there is not yet enough answers to identify a critical mass. Ms Bonifazi nevertheless suggested that the numbers may be sufficient to identify potential cooperation in certain areas.

Overview of the available funding opportunities of the member countries

Chris Nuttall, Senior Consultant, Ricardo, SET Plan Action 6 Secretariat

Participants were informed on the SET Plan Action 6 activities and specifically on the funding opportunities in 20 countries based on the research done by the Secretariat. Beside desk-based research, the Secretariat presented the outcomes of the survey, which was launched in August 2019 to gain further understanding of national R&I funding/financing schemes available to industry to support the delivery of the implementation Plan for country representatives.

The database of financing programmes was presented. All identified programmes are categorised by key categories including focus area, financial instrument, TRL, financial size, sector and type of energy measure and source of finance. In total, 43 EU-wide funding programmes were identified, 6 cross border and 78 national, most of them focusing on renewable energy and/or energy efficiency.

EU Finance - Innovation Fund: Driving clean innovative technologies towards the market

Roman Doubrava, Deputy Head of Unit C3 Land use and Finance for Innovation, DG for Climate Action, European Commission

Roman Doubrava delivered a presentation on the Innovation Fund. He highlighted that the fund will aim to avoid emissions and boost competitiveness, by supporting innovation in energy-intensive industries, renewable energy, carbon capture and storage, and energy storage. Key features of the Innovation Fund were presented to the audience: (i) a volume of at least EUR 10bn at current carbon prices; (ii) support of up to 60% of additional costs related to innovative technology; (iii) financed from the revenues of the EU Emissions Trading System; (iv) Support of additional capital and operating costs (up to 10 years); and (v) the selection criteria will be GHGs emissions avoidance, degree of innovation, project maturity, scalability and cost efficiency. The Innovation Fund will support the scaling-up of demonstrators and aims to build a portfolio of small and large scale demonstrators.

Mr Doubrava reminded that the first calls are expected for mid-2020 and then there will be regular calls up to 2030. In terms of synergies, it was also pointed out that the Innovation Fund can be combined with other EU financing instruments and that Member States are currently discussing how national programmes can be linked to it.

EU Finance - EIB support to energy demonstration and low-carbon industry projects

Marc Tonteling, Industry Expert, Advanced Materials Division, EIB

Marc Tonteling delivered a presentation on the EIB support to energy demonstration and low-carbon industry projects. He explained that in 2018 the EIB pledged an investment of EURO 16.1bn to climate action, particularly targeting renewable energy, low carbon transport, energy efficiency, climate adaptation and R&D. Mr Tonteling presented EIB projects fundamentals: (i) EIB finances

specific projects through loans; (ii) EIB finances up to 50% of project costs; and (iii) the combination of EIB loan and grant is possible, but the total amount of the EIB loan and the grants (from EU) combined should not exceed 70% of project costs.

Mr Tonteling reminded that key requirements to access EIB funding are that projects have to be eligible according to EIB priorities (i.e. environment, infrastructure, innovation and SMEs) and they need to be sound/viable from a technical, economic and financial point of view (due diligence). In terms of synergies with other EU financing instruments, it was pointed out that EIB loans can be combined with funds from the Innovation Fund and that projects will be subject to full EIB due diligence.

Mr. Tonteling also presented the Energy Demo Projects (EDP) Facility, which aims to bridge the financing gap between demonstration and commercialization and support innovative projects otherwise too risky to be supported by traditional instruments.

EU Finance - IPCEI possibilities for funding

Jyri Ylkanen, Policy Officer, DG Grow, European Commission

Jyri Ylkanen presented to the audience the Important Projects of Common European Interest (IPCEI) possibilities for funding. Key criteria were highlighted for projects to fall within the IPCEI scope: (i) clear and concrete contribution to a Union objective and significant impact on EU competitiveness, address societal challenges or value creation across the Union; (ii) the project must be of major importance for EU policies; (iii) more than one Member State involved; and (iv) positive spill-over effects on multiple levels of the value chain and alternative uses in other sectors.

In terms of synergies, IPCEI funding can be combined with other funding sources, including private, H2020/HE, structural funds, etc. It was highlighted that projects can be aided up to 100% of the funding gap and costs of first industrial deployment are considered eligible.

Mr. Ylkanen informed that a project on microelectronics had already been approved and discussions are taking place on a number of other (e.g. batteries, low-emission steel and industries and hydrogen).

Living Labs: implementation and funding of projects on making EU industry less energy intensive and more competitive systems

Two parallel Living Labs were organised: one on Steel and Chemicals and the other on Heat & Cold and System integration. In each session, two realised projects were presented by project promoters. In smaller groups of around 20 participants (2 groups each for Steel and Chemicals and Heat & Cold and 1 for System integration) from industry, research organisations, national and European funding programmes, two aspects were discussed: (i) *barriers encountered towards project implementation and funding* and (ii) *how to overcome barriers and possibly identify typically required preconditions for funding such projects*. The below sections summarise the key discussion points emerging from the Living Labs.

Steel and Chemicals

Moderated by Jean Theo Ghenda, Director Technologies, EUROFER and Felice Simonelli, Head of Policy Evaluation and Project Development, CEPS.

In the Living Lab for Steel and Chemicals, two projects were presented to introduce the exchange with participants. Topics discussed were: i) Thyssenkrupp Steel Europe transformation towards carbon neutrality – presented by Bianca Prado, Thyssenkrupp Steel Europe AG and ii) ArcelorMittal's

project SIDERWIN on decarbonisation of steel production by electrification – presented by Hervé Lavelaine, ArcelorMittal. Further details can be found in the presentations shared with participants. During the presentations, the presenters raised a number of questions addressed to the whole audience. Notably, the possibility for synergy/combination as well as sequencing with regards to the different funding instruments currently available were mentioned. The questions are summarised as follows:

- **Synergies and financing gap:** what are the funding gaps between the IPCEI and the Innovation Fund? How to combine the two funding sources? For instance, Innovation Fund needs to compare conventional technologies with new technologies, what are we comparing exactly? How do we evaluate Innovation Fund gaps?
Innovation Fund covers up to 60% of the difference between the new and the conventional technology, the 40% of the private part can be topped up with other funding? Up to what level? Which limit is considered acceptable for the EU or national governments?
- **Sequencing:** There is necessity of sequencing mechanisms, it is important to have specific funding sources that cover low TRL levels for instance Horizon Europe, then e.g. Innovation Fund for higher TRLs level. It is not clear yet how the matching of funds is going to work. Sequencing is necessary, as well as the possibility for each of them to be used separately.

Barriers encountered towards project implementation and funding

- Industry stakeholders pointed out that recognition of risks taken by the private sector for innovating is of paramount importance. In principle, innovative projects do not always provide returns, so from a purely business perspective, there might not be a real incentive to invest. Thus, financial support and risk-sharing from the public sector to make the business case are deemed crucial. Due to the high level of risk related to innovative projects, some participants consider grants the best support instrument..
- Participants stressed the importance of having more clarity on the possibility for synergies of the different funding sources. In this regards, having the possibility for combination of the different funding sources, also allowing their top up (possibility for covering the remaining gap), is deemed crucial.
 - According to the participants, the major hurdles lay in the **complexity of the setting of the different funding sources** such as the diverging definition of eligible funding gaps and eligibility criteria.
 - Hence, some industry stakeholders called for a harmonised assessment of the way financing gaps are defined and calculated, given that currently different ways of assessing such gaps exist.
 - Furthermore, the question was raised **whether a financing gap is suitable when dealing with completely new/disruptive technologies.**
 - It was also pointed out that some current developments in the **foreseen EU taxonomy for sustainable finance bring additional complexity** in the funding discussions.
- Sequencing of different financing sources was also emphasised as a crucial element to be addressed. In this regard, a long-term approach was called for in order to ensure that projects can be financed throughout the whole development process.
- Appropriate framework conditions were highlighted as key:
 - The necessity of having a level playing field for products sold in the EU has been stressed. Some stakeholders expressed the opinion that the European Commission should use appropriate instruments to guarantee that products sold on the EU market, whether produced in the EU or imported from third countries, have a similar CO2 constraint – while making sure that European Economy remain competitive. It was pointed out that carbon border adjustment belongs to such possible policy instrument. However, currently instruments such as the carbon border adjustment are not in place.

Thus, to make sure investments are made in the coming years to meet the targets set for 2030, it was pointed out that the currently available EU/national funding sources should be used in this timeframe to cover financing gap.

- It was stressed that ensuring the availability of energy (quantity, quality, security of supply) at a competitive price is needed to make a business case and compete at both European and global scale. In addition, ensuring competitive prices for energy was raised as a crucial action to reduce the financing gap and complement the available funding sources.
- The importance of having the necessary infrastructure for energy in place has been underlined.
- Participants agreed that also the society, intended as the general public, plays a key role. It is very important that society also commit to the transition towards “greener” energy. It was raised the question on whether the society is geared up to pay a premium for “clean” products. On the latter, green label has been raised as an important element.
- Looking at the multitude of available funding schemes, some industry stakeholders called for moving towards a one-shop-stop principle for funding that would allow to bundle existing funding streams. Also, the review of state aid rules was raised as a possible option to ensure more cooperation between companies in horizontal and vertical manner and to help obtaining finance from IPCEI.

Recommendations to overcome the barriers and preconditions for funding

- **The cost-efficiency** was stressed as an increasingly important factor to be considered when applying for funding because competition for funding will be high among projects. It was stressed that project promoters will be competing for the lowest price for CO₂ avoidance / abatement. Thus, despite funding rules (for example allowing for up to 60% coverage of funding gap by the Innovation Fund), project promoters might apply for less than that, given the competition faced and the limited availability of funds.
- It was emphasised the importance of effectively demonstrating with applications the capability of CO₂ abatement, which will also play a crucial role.
- Some participants pointed towards the need for harmonisation in the definition of funding gaps. Flexibility in defining the funding gap was raised as an important element, as well as the possibility of adjusting the calculation given the fact that projects evolve over time. More exchange between European Commission and stakeholders on this was deemed beneficial.
- Some industry stakeholders called for more a more stable regulatory environment. Frequent changing of political framework and targets is seen as potentially jeopardising business and possibly counterproductive for investments. As companies are working with long-term business plan, more stability of rules and long-term planning that can go beyond the policy cycle are seen as desirable.
- Some industry stakeholders pointed out that a shift towards a one-stop-shop principle for funding would be desirable. The feasibility of such approach was discussed among participants and diverging views emerged. It was highlighted how the one-stop-shop could be designed in such a way to help companies identify the most appropriate funding instruments and advise them on how to combine the different funding streams.
- It was stressed by some participants the need to look at long-term targets but also at intermediate milestones. This is particularly applicable to sectors where intermediate steps might not be so relevant in terms of CO₂ reduction in the short-term, but are still necessary to achieve long-term results. Faster selection processes and fast tracks were also indicated as beneficial.
- From the perspective of public authorities, important preconditions that were also highlighted are the following: the market potential of projects, their direct and indirect effects (i.e. spill overs),

the level of innovation and CO2 reduction to be expressed not only in terms of tons, but also in terms of Euro per ton, thereby allowing more comparability of projects.

Heat & Cold

Moderated by Sònia Clarena Barón, Manager of European Affairs, EU Turbines and Ugo Simeoni, Research and Innovation Manager, ETN Global.

In the Living Lab, two projects were presented to introduce the exchange with participants. Topics discussed were: i) Waste heat to power: sCO₂ cycles – co-presented by Ugo Simeoni, ETN global, Marco Ruggiero, Baker Hughes and Olaf Bernstrauch, Siemens and ii) Polygeneration systems (micro cchp for industrial applications) – presented by Maija Mäkinen – Aurelia Turbines. Further details can be found in the presentations shared with participants.

Barriers encountered towards project implementation and funding

- Participants agreed that the more alignment there is between different national financing schemes, the easier bilateral or multilateral cooperation is. However, two central differences between national financing schemes were mentioned hindering the possibilities of combining funds from several member countries. Firstly, whereas some countries such as Germany and Finland have calls that are constantly open for proposals, other countries only publish calls once or twice a year. Secondly, while some countries have a two-step application procedure, other member countries have a one-step process. These two factors challenge the ability of beneficiaries to coordinate the different stages of their application procedure and to engage in cross-border cooperation;
- Industry and research stakeholders pointed towards the fact that calls often exclusively provide the funds necessary to develop a project from one TRL to the next, without a long-term plan. This poses a barrier in terms of the resources beneficiaries must spend in applications for funding projects; it can take up to 8-10 years to reach TRL 8 or 9;
- Several national funding agencies mentioned that some calls only fund place-based initiatives and therefore often prevent cooperation even within one country (e.g. regional managed funds only available for regional enterprises). Moreover in some countries the lack of long term research programmes at national level hinders the involvement of relevant stakeholders
- Industry stakeholders highlighted that they often struggle to find end-users willing to embark on research projects and implement the Pilot stage of a project, if these programmes are not aimed at technologies that reach commercialisation. The risk is therefore often considered too high for end-users.

Recommendations to overcome the barriers and typical preconditions for funding

- The national financing schemes of some member countries should become more flexible by having calls that are constantly open for proposals. Industry stakeholders furthermore expressed a preference for a one-step application procedure in order to limit the time and resources used to prepare proposals. Aligning the timelines between the calls of different member countries was reported to be a central driver in securing funding for transnational research and innovation projects;
- In light of the 8-10 years it can take for technologies to reach TRL 8 or 9, calls should focus more on funding long-term rather than short-term projects;
- In order to foster interregional and cross-country cooperation, participants urged the Commission to assist member countries in their coordination of funds under an EU umbrella initiative. In this respect, participants were informed that a *Co-fund Public Private Partnership* similar to ERA-NET will be established under Horizon Europe. Through this, projects can be funded by several Member States and receive a top-up of 30 % from European funding. SET Plan Action 6 activities will be able to receive funding under the area of “clean energy transition”.

It is, however, up to the Member States themselves to determine the specific activities they wish to fund. The survey mapping the interest of stakeholders carried out as part of the Action 6 activities may help Member States to identify such topics. In addition to the survey results, it was suggested by industry and research stakeholders to write a one-page document on relevant technologies (e.g. sCO₂) that can inform Member State officials on R&I needs in the area of Heat&Cold. Several national representatives agreed that such a document would be helpful for defining areas of common interest. To further delineate the topics of common interest and to discuss potential funding schemes, it was suggested to have a roundtable with EC and member countries at the next Action 6 networking event;

- End-users should be incentivised and supported in reducing financial risk, in order to foster their involvement in the development and demonstration phases of a project.

System integration

Moderated by Ludo Diels, Research Leader, VITO

Barriers encountered towards project implementation and funding

- SMEs and start-ups usually encounter the biggest barriers to access funding. The example of 'Aurelia Turbines' showed that limited funding for deep tech start-ups and large projects is an important issue;
- Enterprises can apply for funding dedicated to SME/Startups only for a limited number of years (five-year barrier). This presents an issue for large and very capital-intensive projects;
- Although there are different calls for projects, they are often limited to just one project. Consequently, interesting and innovative approaches may get excluded;
- The combination of funding at EU and national level could represent a good opportunity for enterprises. However, some issues have been identified: (i) lack of knowledge concerning the funding potential at EU, national and regional level; (ii) the different timing of calls for funding at EU, national and regional level; and (iii) the differences on how projects are evaluated at EU and national level.
- The composition of consortia was identified as a key issue. Especially with higher TRLs, enterprises need to focus also on the commercial side, building a competitive value chain. In this respect, identifying the best partners is crucial. In order to create valuable consortia, enterprises tend to collaborate with known enterprises and not to include partners from other countries or regions. To solve this problem, there is a need to better use existing entities such as clusters, networks and partnerships.

Recommendations to overcome the barriers and typical preconditions for funding

- The calls should be open to more approaches and different technologies, especially for projects aiming to reach higher TRLs;
- In Turkey, the use of the EUREKA program is widespread. According to the national experiences reported by participants, EUREKA could play a good role in improving companies' network with other countries and selecting valuable partners. The program helps to identify potential partners before setting up a project. Business Finland furthermore explained that they organise networking initiatives to invite national and international players;
- Funding procedures should be harmonised among countries. This would in part improve the knowledge of companies and make the access to funding easier;
- When finding partners, companies should adopt a value chain approach where they select the strongest players. The entire value chain must be in place at the same time and with the same TRL level;
- For higher TRLs there is the need to set up a business case to understand if a project is viable or not. To do so, companies need the support of advisory services;

- In several cases, a project is a follow-up of another one. To make the selection of process more effective, the European Commission is discussing internally to conduct a sort of portfolio analysis to combine a set of projects within the same call.

Moving forward with implementing SET Plan Action 6

Marie-Jose Zondag, Senior Consultant, Ecorys, SET Plan Action 6 Secretariat

Through Mentimeter questions, the audience was asked to contribute on the focus of IWG6 Implementation Plan for 2020-2021 and how to move forward with the SET Plan Action 6. Results can be found as a separate attachment to this document.

Conclusions

Eric Lecomte, Policy Officer C2 New energy technologies, innovation and clean coal, DG Energy, European Commission

Timo Ritonummi, Chair of SET Plan Action 6 and Deputy Director General in Energy Department of Ministry of Economic Affairs and Employment, Finland

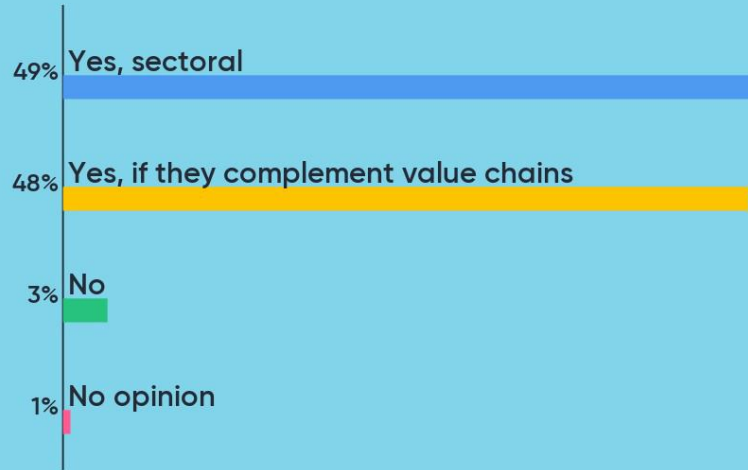
Eric Lecomte stressed the importance of the SET Plan Action 6 to provide added value to the involved stakeholders and tackle the climate change urgency. He highlighted the relevance of the presentations given in the morning sessions and the importance of the questions emerged from the living labs regarding the EU funding schemes, which will be reported to the responsible persons within the EC.

The IWG6 and the Secretariat will take stock on the outcomes of the event and further progress with the SET Plan Action 6 implementation. The revision of the Implementation Plan will be very important in the coming years, also in light of the upcoming European Green Deal. Enlarging the scope of the SET Plan Action 6 to other sectors will also be explored.

Mr Lecomte finally highlighted the success of the event and thanked all participants for their precious contributions and inputs. Timo Ritonummi concluded the event by thanking once again all participants.

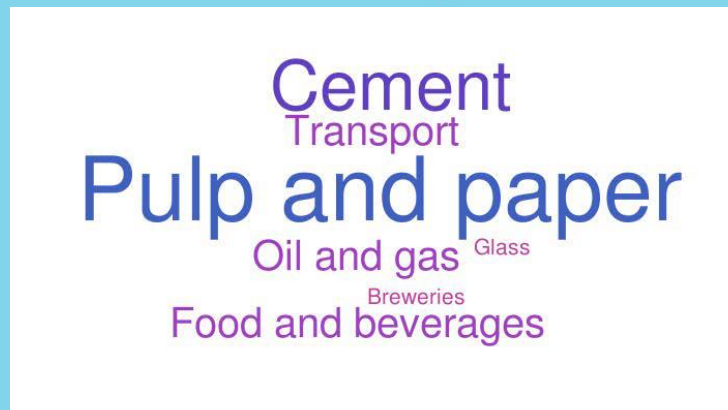
Moving forward with implementing SET Plan Action 6: Results from the interactive session

Do you think it good to add other sectors or topics to the implementation plan, next to Steel, Chemicals, Heat & Cold and System Integration?



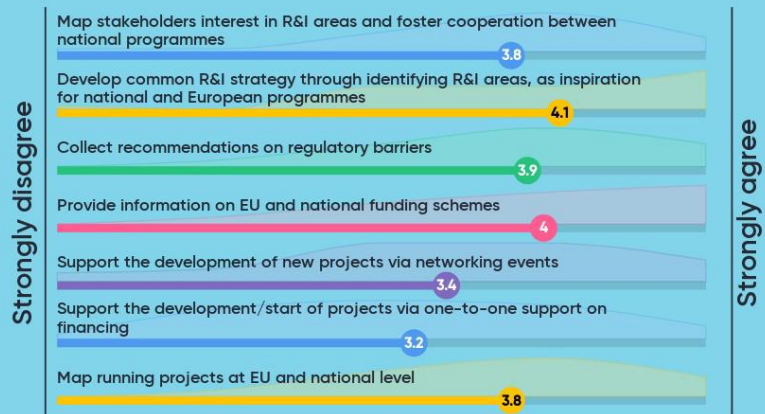
24

If yes, which sector would you suggest to add?
(please answer only if you have an opinion)



17

Which of the following SET Plan Action 6 activities bring most value added



29

What are your expectations from SET Plan Action 6 ?



22

In 2020 the implementation plan of SET Plan Action 6 will be revised. What should be the focus of the Working Group of SET Plan Action 6 in 2020?



19

What should be the focus of the SET Plan Action 6 Networking event in 2020?



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