

European Technology and Innovation Platforms

Following the adoption of the European strategic energy plan (SET plan) in 2007, the European Commission proposed establishing European industrial initiatives (EII) as public-private partnerships to implement research agendas for the development and deployment of low carbon energy technologies. In 2015, the energy policy review under the energy union led to the EIIs merging with existing European technology platforms (ETP) to create nine European technology and innovation platforms (ETIP). They operate similarly to other ETPs, but are bound to SET plan implementation.

Policy context

In January 2007, the European Commission adopted an [energy policy](#) for Europe that included the [preparation](#) of a European strategic energy technology plan ([SET plan](#)). The SET plan tackled two objectives – lowering the cost of clean energy; and putting EU industry at the forefront of the low carbon technology sector – by developing energy technologies. Existing [European technology platforms](#) (ETPs) had started to develop common visions in various energy technologies. Nevertheless, the Commission considered that this work had not overcome the problem of fragmentation, sub-critical capacities and overlapping activities between European and national levels. There was also a need to increase public and private energy research budgets. The [SET plan](#) adopted in November 2007, introduced a new model of focused cooperation based on joint strategic planning, more effective implementation, increase in resources and reinforced international cooperation. A steering group chaired by the Commission with government representatives from the Member States would oversee the implementation of the SET plan, supported by an information system ([SETIS](#)) managed by the Joint Research Centre (JRC). To implement the objectives of the SET plan the Commission proposed creating a new type of [public-private partnership](#) (PPP) – the European industrial initiatives (EII) – and a European energy research alliance ([EERA](#)). The SET plan was [endorsed](#) by the Council of the EU in February 2008.

European Energy Research Association (EERA) gathers more than 175 research centres and universities from across Europe. It has developed 17 [joint programmes](#) where institutions work together to tackle key research priorities under the SET plan. These joint programmes are supported at the national level. They are complementary to the use of other [EU joint programming](#) instruments such as the [ERANET co-fund](#) in Horizon 2020.

European industrial initiatives

Increasing investment in energy technologies

In October 2009, the Commission adopted a [communication](#) regarding [technology roadmaps](#) for the development of the low carbon technologies in six fields: wind energy; solar energy; bioenergy; electricity grid; carbon capture and storage (CCS); and nuclear fission. An additional transversal initiative on energy efficiency linked to smart cities was also proposed. The EIIs would gather industry, the research community, Member States and the Commission to develop and put in practice an [implementation plan](#) for each field. These plans would aim to achieve the expected objectives defined in the technology roadmaps, such as 20 % and 15 % of EU electricity produced respectively by wind energy and solar energy technologies. The EIIs would accelerate the development and deployment of these technologies by aligning European and national programmes, pooling public and private resources and sharing the associated risks.

The EII would complement existing PPPs in the energy sector such as the [joint technology initiative](#) on fuel cells and hydrogen and the planned [European Institute of Technology](#) knowledge and innovation communities on energy and climate change. There were also links to establish with the [contractual PPPs](#) (cPPPs) in energy efficient buildings, factories of the future and green cars, created in the context of the European economic



recovery [plan](#) in November 2008. The European Parliament had drawn attention to the risk of duplication and multiplication of initiatives in its [resolution](#) regarding the SET plan of July 2008.

The Commission estimated that reaching the objectives set in the technology roadmaps would require an investment of €60 to €70 billion for the following 10 years. This meant that the EU public and private investments in energy technologies had to increase from €3 to €8 billion a year. EU funding would be available under the framework programme (FP) for research, the intelligent energy Europe [programme](#), the [NER 300 programme](#) based on emission allowances from the New Entrants' Reserve (NER), set up under the EU emissions trading system and the European energy programme for recovery ([EEPR](#)) established in July 2009.

The first four EIs (wind, solar, electricity grid and CCS) were [launched](#) in June 2010. Two additional EIs on bioenergy and nuclear energy were launched at the SET plan [conference](#) in November 2010. The initiative on smart cities was finally launched as a [European innovation partnership](#), a new type of PPP proposed under the innovation union flagship [initiative](#) in October 2010.

Evaluation of the European industrial initiatives and the SET plan

A [review](#) of the EIs conducted by the JRC in 2013 concluded that the SET plan had promoted the 'Europeanisation' of energy technology research. The EIs had not fully achieved their mission and key objectives. The involvement of industry and Member States had been unbalanced and the EIs lacked the financing to meet the ambitions of their technology roadmaps. Clearer support from the public and private side were needed. The links between different EIs were also seen as too limited. The review suggested: better definition of the scope and remit of the EIs; clarifying the role of the Commission and the Member States in the EI decision-making process; stepping up Member States' involvement in and commitment to the operation of the initiatives; and extending the EI teams to include stakeholders from the whole innovation ecosystem (research, supply chain, market uptake and regulation). The success of the SET plan entailed an increased alignment of national energy research and innovation policies, the development of joint actions between the Member States and the coordination and integration of national and EU funding.

Following this review, a Commission [communication](#) on energy technology and innovation took stock of the situation regarding the SET plan and the EIs. It confirmed the need to focus the SET plan on energy system integration and the integration of activities covering the whole innovation process. The Member States also needed to increase their commitment to the plan. In the context of the preparation of Horizon 2020, the Commission noted that EU funding needed to focus on large scale efforts where it can really add value.

The Commission proposed to review the SET plan by developing an integrated roadmap consolidating the technology roadmaps. Its scope should be larger, encompassing the whole innovation ecosystem. An action plan derived from the roadmap would lay down the required EU and Member State coordinated or joint investments. The EIs and ETPs should review their mandate and structure. New members should be welcome, to address not only technological issues but also regulatory, financial, market and behavioural barriers to the development and uptake of low carbon energy technology.

Merging European industrial initiatives with European technology platforms

A preparatory document for the [integrated roadmap](#) of the SET plan was published in December 2014. The following month, the Commission adopted the [communication](#) on the energy union, setting four core priorities for energy research in Europe: becoming world leader in renewable energy technologies; facilitating consumer participation in smart energy systems; developing efficient energy systems; and developing sustainable transport systems. Carbon capture and storage and nuclear energy were added as additional research priorities. The [integrated SET plan](#) adopted in September 2015 translated the energy union priorities into 10 key actions. It also noted that the EIs were not delivering to the level required to advance the SET plan.

As mentioned in the 2016 integrated SET plan progress [report](#), the six EIs were merged with eight existing energy ETPs and an additional ETP created on deep geothermal energy. These nine energy ETPs were rebranded as European Technology and Innovation Platforms ([ETIPs](#)). As with the ETPs, the ETIPs are industry led fora that develop a strategic research and innovation agenda for their field and are consulted in the preparation of the framework programme. A key difference is that they are bound to develop and implement the SET plan research and innovation priorities and to support the SET plan steering group. Their governance is similar to that of the non-energy ETPs, but they are expected to develop closer links and interactions with the Member States. Their membership is also expected to be extended to include stakeholders from the whole innovation process.