

POLICY PAPER

THE SET-PLAN: A GOOD WAY TO HARMONISE RESEARCH AGENDAS BUT FALLING SHORT ON FINANCING



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Introduction - the SET-Plan: a conceptual breakthrough

As much as we had for long a very fragmented European energy market, following national orientations and objectives rather than promoting a European-wide interest, we had a fragmented energy research effort in Europe, with national and European instruments focusing on a broad range of topics, overlapping each other on some sectors while leaving black spots uncovered in parallel. At the same time, this fragmentation was also very much visible according to the type of entity financing R&D, public and private organisations largely following different research agendas.

The elaboration of the SET-Plan in 2008 was a conceptual breakthrough as it had the ambition to align public and private, European and national research agendas in the field of energy, covering the whole innovation chain from basic research to market roll-out. Governance structures such as the European Industrial Initiatives as well as the European Energy Research Alliance precisely aimed to address this issue and to jointly define research priorities and common objectives. Despite shortcomings, the remarkable thing about the SET-Plan is the recognition that R&D agenda should follow the policy agenda.

The SET-Plan, conceived as the innovation pillar of the energy union, needs a new impetus. For this reasons, we welcome the Commission communication on accelerating the European energy system transformation. We believe that the revised SET-Plan should better stick to the policy agenda, follow an integrated systemic approach rather than support to individual technologies, rely on a strong governance structure, and offer attractive financing opportunities. However we regret that the Commission did not give to the SET-Plan the status it deserves and adopted it on 15 September as a (C) document without even addressing it to the European Parliament and to the Council, as it is the case for all (COM) documents, not providing translation nor publication in the Official Journal. Ahead of the climate conference in Paris, **downgrading the visibility of innovation represents a political mistake.**

1. Research and development serving the energy transition

A first design flaw from the European Commission was to isolate sectors from each other. In 2008, the Commission proposed to identify R&D priorities through roadmaps and key performance indicators for wind, solar, biofuels, grid, nuclear and CCS separately instead of encouraging systemic integration and synergies. A second flaw in the approach was the focus on power generation and the absence of energy consumption and demand-side management, including on heating and cooling, in the R&D agenda.

These mistakes were partly corrected in 2009 with the development of a more horizontal industrial initiative, "Smart Cities and Communities", covering supply- and demand-side technologies, social innovation, transport and grid issues at once. This approach is the right one to be followed in the implementation of the revised SET-Plan. While **technology specific measures are of course still necessary** (e.g. cost-reduction of photovoltaic cells and modules, optimisation of the design and standardisation of wind turbines for deep off-shore conditions, demonstration of advanced biofuels production), they should be put in the context of the energy transition.

What is the EU doing on solar?

The EU lost its leadership on PV cells and modules to China within a few years and we should urgently get prepared for the next generation of equipment manufacturing. While the EU is struggling to find 50 M€ in order to kick-start a demo line on heterojunction (the xGWp project), the State of New York supports Elon Musk's SolarCity competing project with 750 M\$!

In addition, little seems to be done in order to foster the Building integrated PV (BIPV) family, although BIPV components are key to the success of the energy transition, allowing renewable electricity generation in nearly zero energy buildings.

For doing so, we encourage the Commission to push to an even further stage the **alignment of the SET-Plan with the priorities of the energy union**. In a context where the European Union is facing crucial challenges of reducing energy demand, increasing the penetration of decentralised renewables, modernising the transmission and the distribution grid, these aspects should be the cornerstone of the new SET-Plan. For these reasons, the definition of the following over-arching priorities proposed by the Commission in the new SET-Plan, following the energy union, is a good orientation:

- *Renewables number one*: this political commitment from president Juncker needs to be underpinned by a strong innovation component leading to further cost-reduction and efficiency gains in wind and photovoltaic, but also support to less mature technologies like ocean energy.
- *Smart systems empowering consumers*: while our energy system is shifting from a centralised to a decentralised structure with a number a citizens engaging themselves on the way of self-generation, research priorities should go to the development of a smarter transmission and distribution grid allowing demand-side management measures to fully compete with power generation and moving forward on energy storage at household and district level.
- *Efficient efficiency and savings*: research is still necessary to anticipate the introduction of near-zero energy buildings foreseen for 2021 by the Energy Performance of Buildings Directive and to improve components for new built such as buildings integrated PV (BIPV) elements. Deep renovation techniques could be improved to refurbish the existing building stock, bearing in mind that solutions for heating and cooling should be a priority. This topic should include a component related to social innovation as behavioural aspects are central to energy savings, building capacities of local actors.
- *No nuclear and CCS in European research*: the space and resources offered to nuclear (fission and fusion) are totally disproportionate compared to its future role in the energy mix and compared to private investments in this sector. CCS should also disappear from the radar as investments in this sector are falling.

It is acknowledged that there is in Europe mature technology on renewables and efficiency. What is mostly needed is to **support real-scale demonstration projects throughout Europe** to allow cost-reductions and exchange of best-practices allowing market roll-out. All these technologies need to be deployed quickly so that they contribute to the achievement of our 2020 and 2030 objectives. In this respect, R&D projects need to be accompanied by other types of projects aimed at gathering and

disseminating good practices, building capacities of local actors, developing standards and benchmarks and supporting policy-makers. These intentions were the justification to launch the **Intelligent Energy Europe programme**, which the Commission decided to merge with the Framework-Programme in Horizon 2020. The Commission should pay more attention to these projects developing tools, methods, models and scenarios supporting the energy transition and triggering stakeholders' engagement. We also believe that **cities**, as a major contributor to the energy transition, should have been given a more prominent role in the Commission document.

In order to do so, **the Commission should also have the courage to acknowledge that R&D support to CCS and nuclear is incompatible with the energy transition**. This revision of the SET-Plan is a timid step as the Commission acknowledges that "*the business case for CCS in Europe has not been yet established*", drawing the lessons of the disastrous European Economic Recovery Programme in this field. However, nuclear fission is unfortunately still presented as an option despite all recent tendencies in this sector. In addition, we can regret the importance given to ITER, diverting significant human and financial resources from renewables and efficiency in order to maintain the illusion of nuclear fusion.

2. A strong governance for a credible planning exercise

A key condition to make a success out of the SET-Plan is to ensure **the full participation of all actors** involved in energy R&D: companies, research institutes, universities... The SET-Plan has well perceived this need as all stakeholders are part of the governance structures of the three priorities according to their field of operation, including utilities, the manufacturing sector, construction companies, transmission and distribution system operators, etc. On top, a steering group gathering the 28 member states is ensuring the consistency of the SET-Plan implementation.

However, there are still many ongoing fora and structures such as European Technology Platforms, public/private partnerships, Joint Undertakings which also have their own governance structure. Some of these entities are sometimes duplicating each other: the Commission should streamline them.

3. Where is the SET-Plan financing? Clearly not in the EU budget!

The Commission is still short of one step: ensuring proper financing of an ambitious EU innovation policy. As well designed as it is, the SET-Plan is not a funding instrument but only a planning and programming exercise. It should be implemented by European programmes such as Horizon 2020 but also national expenditure and private funds, also allowing a proper **mix of grants, debt and equity**.

Energy R&D budget is today largely coming from private sources. Overall, 66% of research investment is corporate expenditure. Horizon 2020 and other EU **funding instruments represent only some 6% of the global European energy research effort**. It is important that these EU instruments are fully aligned with the SET-Plan priorities and focused on demonstration projects rather than aggregate member states shopping lists. For this reason too, downgrading the SET-Plan to a lower level of political visibility is a bad signal sent to member states while they still are the main source of financing. The remaining 28% are engaged by national programmes. Some **joint programming and pooling of resources** should be encouraged, building on the encouraging results of the most recent ERA-NET initiatives on smart cities and grids, gathering respectively 18 and 21 member states.

On the same note, the Commission should encourage **dissemination and replication** of successful projects results and push beneficiaries to network and share good practices. In this respect, the fact that membership of the **Covenant of Mayors** is a prerequisite to access Horizon 2020 funds under the Smart Cities and Communities calls for proposals is a positive decision.

Beyond traditional grants, access to financial instruments is a must. We believe that the **Juncker Plan** should focus on innovation, especially as it is funded via a reduction of the budget initially allocated to Horizon 2020. We will carefully monitor the work of the EIB and of the Commission under the EFSI to ensure that money taken away from Horizon 2020 is actually spent on innovation projects in line with the SET-Plan priorities.

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