Signature features of future energy research policy to include greater sector coupling, digitalisation, living labs and cross-system issues. (Icon)

7th Energy Research Programme 20.09.2018

New Energy Research Programme published

The German cabinet has passed the new, 7th “Innovations for Energy Transition” Energy Research Programme. The programme replaces its predecessor from 2011. Content-wise, the programme builds on the successes of recent years, sets new courses and defines focal points for research funding and innovation policy in the energy sector. For the years 2018-2022, the German Government is budgeting 6.4 billion euros for energy research.

The 7th Energy Research Programme of the German Government has been published. It defines the focus of research funding in the energy sector for the years ahead.

The 7th Energy Research Programme is the result of a comprehensive, preceding consultation process involving key players from associations and corporations, research and scientific organisations, members of research networks and representatives of German federal states. The BINE Information Service covered this process with numerous news updates.

The programme opts for a new approach to a cross-sphere, topic-oriented programme structure, in order to embrace the challenges of energy transition and of the complex dynamics of innovation in the energy sector. The German Federal Ministry for Economic Affairs and Energy (BMWi), which is heading the programme, is joined in its preparation by the Federal Ministry of Education and Research (BMBF) and the Federal Ministry of Food and Agriculture (BMEL). The budget for energy research is set to increase in the period 2018-2022 by 45% compared to the period 2013-2017, to 6.4 billion euros.

Four principles of the new energy research policy

Technology and innovation transfer must be accelerated for the ambitious goals of energy transition. “Living labs for energy transition” are being introduced in this regard as a new programme pillar. They will support the innovation process from technological development to market preparation through a holistic approach. Access to the programme is to be facilitated in particular for newer companies. Living labs for energy transition have a pioneering character and are dedicated to issues that play a key role in implementation. These include for instance sector coupling technologies, large thermal storage systems, technologies for CO_2 utilisation and the intelligent networking of energy infrastructures in climate-neutral urban districts.

In a departure from the prior focus of research funding on individual technologies, project funding is to be extended in scope to include systematic and system-spanning issues around the energy transition. Aims include the fuller integration of renewable energies, specifically in the buildings sector, the more efficient use of energy in the consumption sector, energy efficient industrial processes and CO_2 recycling management. Due consideration is given to interfaces to the transport sector, to energy system analysis, energy relevant aspects of digitalisation, resource efficiency, material research and social considerations.
The new energy research programme supports the enhanced networking of institutional research funding and of project funding.
The international and European networking of research work is supported. At European level, the SET plan defines comprehensive measures for energy-based innovations, from research to market launch. At a global level, these are the technological cooperation programs of the IEA, further cooperative relationships are to be broadened.

Cross-sphere, topic-oriented programme structure

The German Government has recognised the failure to embrace the former subject-specific limits of dynamic development in the energy sector. The new cross-sphere and topic-oriented programme structure is based on the concept of the “Horizon 2020” EU framework programme and categorises projects into technology readiness levels (TRL). This “technology readiness level” indicates the technical scientific status of a technology on a scale of 1 to 9. Essentially, projects aspiring to TRL 1 to 3 as development objective and which consequently are assignable to application-oriented foundational research are funded by the BMBF. The BMWi is responsible for more application-oriented research work from TRL 3. The BMEL funds topic-specific, application-oriented research work from TRL 3 into energy-based biomass utilisation. Living labs are assigned to TRLs from 7 to 9 given that developments with market proximity are to be funded in these.

Strategic objectives of energy research policy

Advancement of the energy transition:
Funding is assigned to innovative, holistic solutions for challenges faced in the energy transition, in order to launch these technologies and concepts onto the market quickly. A wide funding approach throughout the entire energy chain with a focus on results transfer is intended to support this avenue.
Strengthening of industrial locations:
Trends such as digitalisation are to be seized on, technology skills in the energy sector maintained, and export opportunities improved.
Macroeconomic risk prevention:
As climatic and environmental effects are felt beyond national boundaries, highly efficient and renewable energy technologies and system solutions must be developed with an eye to providing solutions to problems on a global scale.

New players of the energy transition

Startups are made a high priority in the new research programme. Their role is seen as driving innovation in the development of technological solutions and opening up new markets with innovative and to some extent unconventional products, services and business models. This makes them an important source of momentum in the energy transition. The new funding format of living labs allows startups to test their newly developed, often virtually market-ready products in a flexible framework. Non-technical innovations, such as business models or new services, an accelerated application procedure and the Energy Startups Research Network networking platform are intended to facilitate better involvement of young companies in energy research.

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