



IENE Programme “Innovation in Energy”



Athens, April 2025

Scope

The bulk of research and study work in which the Institute is engaged in, is carried out through various programmes. Such well established programmes include “Electricity and Gas Dynamics in SE Europe”, “Renewables, Storage and Energy Transformation”, “Energy & Employment”, “Funding Instruments & Tools for Energy Transition”, “Energy Efficiency and Energy Poverty in SE Europe” and others (see www.iene.eu for details).

The “Energy & Innovation” programme is the latest addition to the Institute’s areas of work. The decision to augment IENE’s portfolio with one more programme, stems from the huge interest by its members and associates to get involved in new activities which focus on innovative solutions in the energy sector, plus the huge interest on the impact/correlation of AI in the Energy Sector. As energy transition gathers pace, so is the need to come forward with innovative ideas and systems aimed towards (a) improving efficiency in the entire range of energy application*, (b) proposing new type of systems and solutions in the development and use of clean energy technologies, (c) mitigating climate change related challenges (e.g. CCUS, Geo engineering, geoscience etc.)

The objective of this new IENE programme is twofold. On the one hand, it will help the Institute’s research team to broaden its scope of work, and on the other hand it will, through a variety of peripheral activities, provide the platform for a broader engagement/spread information by/among IENE members and associates.

According to the feedback which IENE has received from its wide network of Partners in SEE, many of them are eager to get greater exposure for their work and ideas and also get involved in an informed discussion concerning the new directions which energy technologies have been following lately. Such a discussion is now more relevant and necessary than ever before and can be conducted in an organized and productive way within the framework of the proposed new “Innovation in Energy” programme.

* enhancing efficiency, modernizing & improving grid flexibility, accelerating the deployment of clean energy technologies, promoting decarbonisation, boosting innovation (battery technology, materials science).

Organisation

The programme will be managed, on a day to day basis, by an in-house member of IENE's research team, while in charge of programme planning, direction and related activities will be one of IENE's senior partners who will be the programme leader. Programme planning spans over a 3 year period with an annual review at the start of the year.

Activities

Three types of activities are foreseen within the "Innovation in Energy" programme. **The first one** will cover actual work conducted by the Institute's staff and associates related to the assessment and/or development of innovative solutions in specific areas of the energy sector. Three examples of such work currently in progress in the Institute include, (a) the development of a CCUS hub in Greece including a cost benefit analysis, (b) use of advanced mathematical modelling to determine the tandem use of RES and Small Modular Reactors (SMRs) by nuclear generated electricity in selected areas of SE Europe in order to effectively lower CO₂ emissions from power generation and at the same time provide much needed electricity base load, and (c) optimum use of electricity interconnections in the East Mediterranean and the Adriatic for channeling excess green electricity to high demand areas in Europe and North Africa.

Other areas of investigation also cover:

- (i) The Energy - AI relationship in order to boost innovation (e.g. battery technology, materials science)
- (ii) Cyclical Economy (raw materials, water, biofuels)

The second type of activity involves the development of a networking mechanism in order to showcase and promote energy innovative work undertaken or proposed by IENE members and associates but also by third parties which are engaged in worthwhile projects.

This activity will be conducted through the frequent organization of small scale events such as webinars, group meetings, visits to the premises of companies and organizations involved in innovative work etc. In addition, the Institute intends to organize once a year, an open day, where various groups could talk about their work in a conference

environment and also showcase their work through a poster type approach.

The proposed networking mechanism will contribute towards a deeper and structured dialogue between stakeholders (policy makers, energy industry, technology sector, financial institutions, academia, local communities)

The third kind of activity could focus in the setting up of an “Innovation in Energy” promotion network on a SE European basis. This could involve the preparation of a special web type platform, to be operated by the Institute, which interested parties could access and present their work and seek collaboration with other groups. As part of this activity, IENE could encourage youth participation through hackathons and innovation competitions.

Communication

Communication is a very important element, since the Institute, through this Programme, will try to reach out to the broader technology oriented community and attract interest for its activities. Also, the envisaged networking will require consistent communication support to be provided by the marketing and external relations staff members of IENE.

- Creation of a "think tank" of energy experts that will function as an advisory body and as a means of promoting the program.
- Creation of a Digital Platform, e.g. educational content modules with videos, podcasts and white papers.

Programme Funding

Ensuring adequate funds for the programme can be most challenging under present market conditions. Funds could come from interested companies which already play an important role in promoting innovation within the broader energy field, and also by donor organizations and funds which support efforts in the technology area. Such companies include large integrated energy companies, utilities, but also a growing number of groups which work on energy related digital and AI solutions.

These companies have every interest to support IENE in its effort to promote innovation in energy, since engagement with the Institute could enhance their own plans and aspirations. In this context, it is up to the IENE, in consultation with interested stake holders, to prepare and submit appropriate proposals for funding. Along these lines, IENE will also seek to collaborate with European networks and programmes, such as Horizon Europe**, Innovation Fund***, LIFE, the European Regional Fund (ERDF), ESIF and others.

The Institute's goal for the initial period (June 2025-December 2026) is to raise at least €250,000. Funds which will be used to cover the corresponding overheads of the Institute, the costs of the launching event (scheduled in Athens for May 8th, 2025), the hiring of a full time analyst and of one research associate who between them will undertake to organize and run the programme. Also, a number of targeted actions such as publications, webinars and workshops will be funded through the programme.

** Horizon Europe is the European Union's (EU) largest research and innovation programme for the period 2021-2027, with a total budget of around €95.5 billion. It aims to support scientific excellence, promote innovation and address major societal and environmental challenges.

*** Innovation Fund is the largest funding scheme worldwide, promoting commercialisation of innovative technologies in the area of lowering GHG emissions and energy efficiency.