IEA Technology Collaboration Programme on

Energy Technology Systems Analysis (ETSAP TCP)

Strategic Work Plan 2025-2030

1. BACKGROUND AND RATIONALE

The IEA ETSAP TCP is one of the longest running Technology Collaboration Programmes representing over 48 years of international collaboration on energy systems analysis since 1976. Given the global challenges in meeting significant greenhouse gas emissions as countries seek to deliver on the Paris Agreement, coupled with the requirement to ensure energy security, a joint international programme of energy systems analysis is now even more necessary than it was 48 years ago when the ETSAP TCP was created under the aegis of the International Energy Agency (IEA) in response to the pressures arising from the first oil crisis.

Policy makers need robust evidence and policy analyses that encompass the relevant global, regional national and local factors with increasing detail. In order to assess the contribution of new technological options, the role of key technologies and infrastructure systems to achieve policy goals need to be identified to support and underpin the policies that can bring them to the market. Therefore, analytical tools that examine the integrated energy system operation, including environmental impacts and economic considerations, are essential in increasing the evidence base underpinning these policies. The ETSAP TCP is well equipped to provide the expertise, tools and capacity building for these analyses.

2. STRATEGIC DIRECTION 2025-2030

The main strategic directions of the ETSAP TCP for the next 5 year period are:

(a) *Collaborative Analysis Informing and Underpinning Energy Policy*
The focus here is to guide policymakers with evidence-based analyses of energy security and energy transition pathways to underpin global transition to zero-carbon energy systems, to collaborate with TCP Coordinating Groups on critical minerals, hydrogen, energy system flexibility, thermal networks, carbon management and heat pumps and to collaborate with the International Energy Agency, other IEA Technology Collaboration Programmes, the International Renewable Energy Agency, Clean Energy Ministerial Initiative on Long Term Energy Scenarios, World Bank, etc
This aligns directly with objective 1 of the IEA Medium Term Strategy for Energy Research and Technology 2023-2027, namely *providing world leading technology and innovation advice to governments in designing policies that help to achieve their energy sector transformation to net-zero emissions by mid-century.*

(b) *Collaborative Research and Innovation*
The ETSAP TCP will support research and development activities in order to extend capabilities in TIMES tools in infrastructure, investment, critical minerals and low energy demand scenarios and explore interactions between energy system and social systems, structural change, circular economy and the United Nations Sustainable Development Goals.
This aligns directly with the IEA Medium Term Strategy objective 2, namely *advancing global dialogue and collaboration on key technologies and sectors in close coordination with other multilateral platforms*

(c) *Build Capacity and Engagement*
The ETSAP TCP will provide basic, advanced and competency training in ETSAP tools. In addition, the ETSAP TCP will improve the transparency, openness, documentation, results visualisation and educational materials associated with TIMES energy systems modelling. This contributes to the IEA MTS objective 3, *strengthening the TCPs' operations, increasing their relevance & nimbleness.*

3. WORKPLAN 2020-2025

In order to address the new challenges described above, the cooperative activities in the framework of the ETSAP TCP will include:

a) Maintenance and Improvement of TIMES modelling Tools
Develop and maintain ETSAP tools and methodologies for long-term analysis of the interactions between energy, the economy, and the environment are the minimum objective of this strategic programme.

b) Research and Development
The ETSAP TCP will support research and development activities that continually advance the state-of-the-art of energy systems analyses and integrated energy / economic / environmental / engineering modelling, to the extent that available common funds allow. Focus areas will include infrastructure, investment, critical minerals and low energy demand scenarios explore interactions between energy system and economic and social systems.

c) Traning and Capacity Building
The ETSAP TCP will organize and support basic training, advanced training and other forms of capacity building to foster a new generation of TIMES users and developers and to enable decision makers to know how the models can contribute to policy development/

The Participants shall achieve the objectives through the following means:

a. Promotion of common research on energy systems analysis, integration of existing tools in the present methodology and development of new tools, together with other groups active in the field.

b. Participation in joint meetings with related international projects, making a concerted effort to communicate with the wider professional community, and by otherwise involving decision-makers.

4. MEMBERSHIP

Currently the ETSAP TCP has 23 Contracting parties and is actively involved in collaborations with institutions from around the globe. Each Contracting Party contributes an annual fee and the Executive Committee decides on the use of the annual budget in order to achieve the objectives through delivering the work plan described above.

5.DISSEMINATION AND OUTREACH

In order to enhance information dissemination the ETSAP TCP will:

1. Continue to develop and improve the website to better support the global community of ETSAP Tool users.
2. Continue to build capacity in ETSAP tools, including providing basic at least twice per year. The Tosato grant, which covers the travel and subsistence expenses of trainees from low and middle income countries will continue in the next term , to enable these trainees participate in the training sessions and in the semi-annual workshops.
3. Hold a workshop every six month in order to present the work done by ETSAP and hold thematic workshops and summer schools to maximise the exchange of ideas among the modelling community.