

## CERT ACTION PLAN 2009-2011

Messages from the IEA Ministers at their May 2007 meeting are more relevant than ever: “For a sustainable energy future, we need to accelerate the development and deployment of new technologies. We will work urgently to bring this about.” Ministers further undertook to “encourage the strengthening of our R&D efforts to reduce the costs of new technologies...”, and to “enhance our energy technology collaboration with major emerging economies, bilaterally and through the IEA’s technology network.”

The process initiated by the Gleneagles G8 Summit in July 2005 has meanwhile generated major efforts within the IEA energy technology network to develop strategies for a clean, clever and competitive energy future. The G8 Hokkaido-Toyako summit and associated meetings of energy ministers in June and July 2008 endorsed IEA’s findings. The Agency was asked to undertake further tasks for the G8, notably in the areas of international RD&D co-operation, energy efficiency and clean energy. Support from the IEA was sought in setting up a new international initiative for technology roadmaps on innovative technologies and IEA has been asked to host the Secretariat of the newly created International Partnership for Energy Efficiency Cooperation (IPEEC).

Guided by the goals of the IEA Governing Board (GB) and G8 leaders, the CERT will take action as outlined below. Each of the five numbered sections targets corresponding strategic objectives in the *CERT Strategic Plan 2007-2011* ([http://www.iea.org/cert/cert/CERT\\_Strategic\\_Plan.pdf](http://www.iea.org/cert/cert/CERT_Strategic_Plan.pdf) - IEA/CERT(2007)1/REV1).

References in this document to the CERT’s action imply, where appropriate, implementation by the IEA Secretariat’s team assigned to support the CERT.

### **1) Leadership and dialogue to support the CERT Working Parties, Implementing Agreements and Expert Groups**

The IEA technology network supports knowledge, analysis and know-how in energy technology development world wide. Its Implementing Agreements (IAs) provide the most effective fora for information exchange and co-ordinated research planning. These programmes – and the CERT technology network as a whole – ensure that RD&D progress has the widest, most beneficial impact in both IEA and non-IEA countries. It also fosters greater network engagement with industry, commercial deployment of clean energy technologies and technology transfer to less-developed countries.

The CERT will continue to attach priority importance to its dialogue with all participants in the energy technology network and to supporting their work.

#### Reinforcing liaison within the IEA energy technology network

- a) Annual meetings between the chairs of the CERT, its Working Parties (WPs) and Expert Groups (EGs) to update on evolving energy-sector challenges, cross-cutting issues, current IEA goals, initiatives and decisions, and on how the IEA energy technology network’s specialist know-how can help provide responses.
- b) Fostering stronger communication between the IAs to avoid duplication of effort.
- c) Extracting and carrying forward technology policy messages from IAs’ activities, taking advantage of their periodical end-of term reports at CERT meetings.
- d) Opportunities, at least once per year, for WP and EG chairs to report at CERT meetings.
- e) Opportunities for CERT/WP Liaison Officers to speak at CERT meetings on an ad hoc basis.
- f) Opportunities for CERT Delegates to provide one-page written reports at CERT meetings on new policy developments in their countries, for Secretariat analysis and an oral Secretariat report to generate discussion on common features and cross-cutting issues.
- g) Prompt conveying of CERT decisions to WPs, EGs and concerned IAs, who should also be informed of decisions taken by their overseeing WPs.
- h) Encouraging IAs, WPs and EGs to provide the Secretariat with input of substantive value for policy makers, notably for periodical publications such as *Energy Technology Perspectives - Scenarios & Strategies to 2050*.

### Guiding and motivating the Working Parties (WPs)

- a) Engaging WPs when new activities are initiated, notably those involving industry.
- b) Offering support to WPs in shaping appropriate work programmes.
- c) Regularly reviewing WPs' mandates to exploit every opportunity for contributions to addressing current energy priorities.
- d) Support for WPs' overseeing of IAs.
- e) Monitoring needs to consolidate IAs into larger groupings or to create entirely new IAs.
- f) Encouraging WP efforts to secure new participation of IEA and non-IEA countries in IAs.
- g) Fostering broader participation of specific non-IEA countries in CERT and WP meetings.
- h) Encouraging WP assistance for IAs in promoting more effective, wider communication of findings and messages, notably through the IEA *OPEN Energy Technology Bulletin*.

## **2) Stronger focus on the role of technology policy**

Energy technology remains the CERT's central focus. But the success of energy technology RD&D depends on policies that will catalyse innovation and advances in basic science, policies that will attract investment, motivate researchers and foster demonstration and market uptake of the advanced technologies thus developed.

To inform the policy-making process through analysis weighing relative values of different energy technology approaches, the CERT develops authoritative energy technology policy advice, building on findings from the IEA energy technology collaborative network. It has established – and will continue to support – a strong IEA programme featuring energy technology scenarios, energy indicators data and analysis, technology roadmapping and collaboration within IEA on global energy efficiency and clean energy trends and prospects. In many of these areas, CERT's commitment to tasks assigned by G8 leaders and energy ministers – and judicious use of outputs from these tasks – will contribute to effectiveness.

### Fostering effective government policy approaches

- a) Stronger partnerships with industry and support for its RD&D.
- b) A long-term view of RD&D funding and infrastructure needs.
- c) Leverage to trigger crucial technological breakthroughs to eventually underpin truly sustainable energy systems.
- d) Action to spur investment, notably in technologies that are close to market-ready.
- e) Dynamic deployment policies.
- f) Industry/government sponsorship of IEA network activities, on the basis of what the programmes concerned consider in their best interests.
- g) Involving more non-IEA countries in international energy technology efforts, notably those of the IEA.

### Generating policy messages – a two-phase process.

- a) ***Extracting relevant policy implications*** from research and analysis within the energy technology RD&D and policy community. This includes work of the IEA network, but also that of international groups such as the Carbon Sequestration Leadership Forum (CSLF), the Methane to Markets Partnership, the International Partnership for the Hydrogen Economy (IPHE), the Renewable Energy Policy Network for the 21st Century (REN 21), the Global Bioenergy Partnership (GBEP) and ultimately, as appropriate, the International Partnership for Energy Efficiency Cooperation (IPEEC) and the International Renewable Energy Agency (IRENA). The business and financial communities will be brought into the effort as much as possible.
  - i) *Dialogue*. Through its permanent dialogue with the IEA Secretariat, WPs, EGs and IAs, the CERT is able to:
    - Tap into specialist expertise to mobilise existing technologies and energy solutions.
    - Promote demonstration and deployment of emerging technologies for tomorrow.
    - Investigate the technical potential of fundamentally new transformative technologies for a longer-term totally sustainable energy future.
    - Identify current hot energy topics and pinpoint the relevant policy issues.

- Feed into IEA databases such as the Global Renewable Energy Policies and Measures database (policy, technology and market information).
- ii) *Meeting agendas.* CERT agendas reflect topical focus of IEA network activities and catalyse debate on high-profile policy issues concerning technologies that can make a difference. Agendas include the following.
  - Items on individual technologies of high immediate interest for their energy-security and climate-protection potential today, notably:
    - CO<sub>2</sub> capture and storage.
    - Biofuels (especially 2<sup>nd</sup> generation) and other renewables.
    - Efficient use of energy in all sectors, including industry and transport.
    - Cleaner, more efficient fossil fuels.
    - Energy transportation and storage (efficiency, safety, reliability in electricity transmission).
    - Energy and water.
  - Items on responses to longer-term challenges, such as:
    - Hydrogen economy infrastructure.
    - Advanced electricity networks, superconductivity.
    - Fusion power.
    - Clean technology's role in eradicating poverty.
  - Items addressing specific current GB concerns.
- b) *Developing concisely presented policy messages* that highlight pathways to energy goals and advise on optimising government spending on RD&D, on priorities and gaps with ongoing RD&D and on deployment measures most likely to work.
  - i) Current status and costs of key technologies.
  - ii) Technical and economic potential; recommendations on policies to exploit potential.
  - iii) Barriers to development and deployment.
  - iv) Regulations and standards.
  - v) Financing options, including benefits of IEA international collaborative RD&D.

Messages should be built upon the following.

- i) Synthesised findings from the WPs, IAs and other authoritative sources, including industry.
- ii) Secretariat analysis incorporating energy indicators data and scenario modelling.
- iii) Best-practice guidance from the CERT network on effective policies to accelerate technology deployment, including advice on which policies may fail, and why.

### 3) Frequent, effective communication to policy makers

As governments increase their efforts to develop advanced clean energy technologies, the expertise and diverse scope of the IEA energy technology network will likely generate even greater benefits over coming years. The IEA can help governments and work fruitfully with bodies like the CSLF, IPHE, REN 21, GBEP, IPEEC and IRENA to pinpoint rapidly evolving opportunities for technology to address energy-sector priorities. The CERT will seize every occasion to convey issues-oriented messages to the highest level of national policy making. CERT's visibility – and that of the energy technology network's capabilities – will be enhanced by strong engagement in activities within the G8 processes and the UNFCCC discussions.

Policy makers are also consumers of media services. IEA energy technology policy messages must target the widest possible audience, using high-performance communication methods. A broad range of products and practices will continue to be used, subject to availability of resources.

Carrying concise, policy-oriented messages to the IEA GB and its meetings at ministerial level is a key goal. Now in a new phase of "fast-track" reporting to the GB, the CERT regularly provides briefs and presentations for GB meetings offering accessible, neutral practical information on how existing and emerging technologies for energy supply, conversion, distribution and end-use are relevant to today's challenges. This and the following products and practices will remain at the forefront of priorities for giving visibility to IEA Secretariat and technology network findings.

- a) Regular broad overviews of current energy technologies opportunities

- b) Distinctive branding of IEA energy technology network products; capitalising on IEA publications as a shop window for the network.
- c) IEA publications and web products, including the following.
  - i) Bi-annual editions of *Energy Technology Perspectives: Scenarios & Strategies to 2050* - global scenarios for the longer term demonstrating how a portfolio of current and emerging energy technologies can make a difference.
  - ii) Updates on policy and market information, notably for the suite of renewables technologies.
  - iii) Technology policy input to IEA's annual review *Energy Policies of IEA Countries* and selected in-depth energy policy reviews on individual countries.
  - iv) Studies on:
    - RD&D lessons learned and guidelines;
    - basic science and energy technologies;
    - clean coal and CO<sub>2</sub> capture/storage;
    - alternative transportation fuels; transport sector policies;
    - hydrogen and fuel cells;
    - electricity transmission and distribution technologies;
    - integration of renewable energy in power grids;
    - roles of active and passive solar energy in buildings;
    - trends in energy use and efficiency in buildings and industry.
  - v) Successive editions of *Energy Technologies at the Cutting Edge*, presenting missions, activities and achievements of IAs.
  - vi) The web-based IEA *OPEN Energy Technology Bulletin*.
  - vii) Websites of IAs and the IEA Secretariat (public pages).
- d) Projects exploring the status and outlook of more recently emerging technology concepts with potentially far-reaching impact (publications on national RD&D programmes; RD&D priorities and gaps; prospects).
- e) IEA-organised international workshops on technology development and policy themes; major events involving industry groups.
- f) Showcasing IEA efforts by supporting media coverage and high-profile events in national capitals.
- g) Promoting network participation and presentations at international events.
- h) Encouraging network participants to create own-language IEA websites.

To further dynamise CERT's dialogue with the GB, the CERT welcomes the participation of GB members in CERT meetings. The CERT Chair participates in meetings of the GB's Bureau, and thereby in the drawing up of agendas for GB meetings.

The CERT will ensure awareness at GB level of the resources required to produce the results requested.

#### **4) More fruitful liaison within the IEA family and with the OECD**

The CERT will remain pro-active in its "hot-line" communication with GB members through GB meetings and contact in national capitals. Crucial to this process is consultation with the Standing Group on Long-Term Co-operation (SLT) and the Standing Group on Global Energy Dialogue (SGD), also liaison with the IEA Energy Statistics Division – especially on outreach to non-IEA countries – and, where appropriate, with activities of the OECD and its Nuclear Energy Agency (NEA). Specific steps include the following.

- a) Joint CERT Cabinet/SLT Bureau meetings to review interrelated activities and harmonise output.
- b) Continued CERT and SLT co-operation on mobilising IEA resources in support of member countries' goals and on appropriately articulating IEA energy technology messages.
- c) Joint CERT/SLT sessions; joint workshops focusing on issues of common involvement.
- d) Networking among GB, CERT, WP, EG and IA participants in national capitals to discuss ongoing IEA-relevant activities and convey policy messages generated by the IEA energy technology network.
- e) Frequent systematic exchanges between the IEA energy technology teams and other IEA units, also other members of the OECD family (in particular the NEA), on consistency of messages in IEA publications, papers and other literature, and on material relating to workshops and other events.

Technology information and messages produced under the CERT's authority will be circulated systematically and productively to the CERT's own family of WPs, EGs and IAs, to the IEA energy technology teams and to other stakeholders in the IEA community.

Liaison with outside communities of expertise will be reinforced through groups such as the Experts' Group on Science for Energy (EGSE), the Advisory Group on Oil and Gas Technology and the Experts Group on R&D Priority-Setting and Evaluation.

## 5) More vigorous collaboration with non-IEA countries

Energy issues are now truly global and energy demand, infrastructure and investment questions in both industrialised and developing nations are the affair of the worldwide community. Since energy technologies are the key to addressing global climate change challenges in both developed and developing countries, the CERT can contribute by making its expertise on energy technology development and transfer available to the UNFCCC and other related fora.

The family of IEA energy technology collaborative IAs offers a tried and tested vehicle for joining forces with developing countries to address common energy challenges. CERT is energetically promoting engagement with non-IEA partner countries at senior policy-making level, an important prerequisite for productive collaborating on energy technology development and deployment policies at other levels. Ongoing efforts on stronger, two-way engagement with these non-IEA partners will continue to target concrete outcomes such as participation in IAs where this can add value consistent with the missions of the IAs concerned.

With the CERT's support, a number of activities have been launched by the former Energy Technology Office, in liaison with the IEA Directorate of Global Energy Dialogue (GED) and taking account of work done in other collaborative fora. These will be pursued.

The practice of inviting individual Plus Five countries, also Russia, to CERT meetings will be pursued, following attendance of Brazil, China, India and South Africa as observers, with a view to eventual regular attendance when mutual benefits have been recognised by all.

The CERT will remain active in support, oversight and the quest for resources in the following areas.

- a) In response to the G8 Gleneagles Plan of Action, efforts of the "NEET Initiative" (Networks of Expertise in Energy Technology), bringing together the CERT, Secretariat, WPs and IAs on engagement with the Plus Five countries, Russia and other countries, to foster greater participation of these non-IEA countries in IEA's energy technology network. The process comprises three steps.
  - i) Fact-finding missions involving contact with stakeholders from:
    - Government.
    - Industry.
    - Financial sector, international financing institutions.
    - Research community, academia.
    - Networks such as the Carbon Sequestration Leadership Forum (CSLF), the Global Bioenergy Partnership (GBEP), the Renewable Energy and Energy Efficiency Partnership (REEEP), the Renewable Energy Policy Network for the 21st Century (REN21) or the Asia-Pacific Economic Cooperation (APEC).
  - ii) Thematic workshops on issues emerging from fact-finding missions that offer IEA technology network experts opportunities to present technical and policy findings on topics like clean coal, carbon capture and storage, renewable energy technologies or end-use technologies. Feedback from partnerships and activities already under way will continue to be taken into account when future orientation is determined.
  - iii) Progress reports and maintenance of a global inventory of collaborative energy technology efforts.
- b) Where appropriate, widest possible non-member country involvement in the activities of WPs. When non-IEA countries participate in meetings of IEA bodies, meeting agendas should, where consistent with the body's overall mission, feature topics of special interest to such non-IEA countries, especially topics where international technology collaboration would be useful; agendas should accommodate these countries' own contributions to the body of knowledge.

- c) Ongoing Secretariat work with non-IEA countries such as the project on rural energisation and decentralised energy systems, initiated with a Paris workshop in May 2008 and now the subject of follow-up reporting.
- d) Encouraging IAs to develop the programmes of existing or new Annexes to meet requirements of newly participating non-IEA countries. If, however, such issues do not fit within the missions of existing IAs, the CERT does not rule out encouraging member countries to promote new IAs specifically tailored to address Plus Five country issues.
- e) Invitations to non-IEA countries to IEA-organised workshops and events, whose programmes should take these countries' interests into account where possible.
- f) Encouraging non-IEA partner countries to establish national co-ordination of participation in IEA activities and bodies, along the lines currently planned by China, including own-language websites. In regions of largely non-IEA countries, the idea of the "champion of the region" might be developed, where one country acts as the locomotive for drawing neighbouring countries into the IEA collaborative community.
- g) Continued encouragement for reporting of outreach progress on the IEA public website's G8 and NEET pages; continued support for the IEA *OPEN Energy Technology Bulletin's* work on stimulating non-IEA countries' interest in IEA's collaborative activities.