

Opinion of the European Economic and Social Committee on the ‘Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions — a European Strategic Energy Technology Plan (SET-PLAN) “Towards a low carbon future”’

COM(2007) 723 final

(2009/C 27/13)

On 22 November 2007 the Commission decided to consult the European Economic and Social Committee, under Article 262 of the Treaty establishing the European Community, on the

Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions — a European Strategic Energy Technology Plan (SET-PLAN) Towards a low carbon future.

The Section for Transport, Energy, Infrastructure and the Information Society, which was responsible for preparing the Committee's work on the subject, adopted its opinion on 5 June 2008. The rapporteur was Mr Zbořil.

At its 446th plenary session, held on 9-10 July 2008 (meeting of 9 July), the European Economic and Social Committee adopted the following opinion by 127 votes with 5 abstentions.

1. Recommendations and conclusions

1.1 The EESC welcomes the Commission's Communication and accompanying working documents and concurs with the analysis and description of the position regarding energy technologies. Without a sound strategy to develop energy technologies, any thought of curbing climate change is seriously undermined. For this reason the EESC supports the adoption of the SET-Plan.

1.2 The Communication adds considerable weight to a key element of energy policy — a secure energy supply that is both viable and socially and environmentally sustainable. Security of supply means not just the physical availability of supplies, but also their availability at socially acceptable prices.

1.3 The Commission's Communication quite rightly puts the development of energy technologies at the forefront of efforts to rein in climate change, a position which echoes the conclusions adopted by the 13th Conference of Parties (COP 13) in Bali in December 2007 ⁽¹⁾.

1.4 The Commission's Communication is perfectly correct in drawing attention to the vital importance of time in implementing the proposed strategy (the SET-Plan) if the EU is to fulfil its March 2007 pledge of reducing greenhouse gas emissions by 2020.

1.5 If the EU is to speed up development and the practical application of new energy technologies, it requires more targeted and effective mechanisms which enlist the potential of

public funding, industry, universities and research and boost the synergy between them. At the international level, broader collaboration and measures to prevent the fragmentation of research are also needed.

1.6 The EESC greatly values the position taken by the Commission in its Communication of urging financial, but above all human, resources to be mobilised at all four levels: the private sector, Member State level, Community level and world-wide. The Committee stresses that an important prerequisite for mobilising human resources is support across the board for education in science and technology.

1.7 The strategic plan should include not only the setting of priorities at EU level, but also the establishment of specific priorities at Member State level that respect their capacities and experience, the allocation of sufficient funds from public finances (of the EU and Member States), the optimum use of research and development capacities and private sector involvement encouraged by sufficient stimuli from the energy market, as well as other legal and fiscal instruments.

1.8 The Committee thinks it would be detrimental if what is incontestably the most important instrument for curbing climate change — a strategy for the development and application of energy technologies — were to be overshadowed by other issues which, realistically speaking, must instead provide the necessary framework for supporting and stimulating this development (EU ETS, support for the use of renewable energy sources, the Third Energy Package etc.). Only a true shift toward more effective technologies in the production and consumption of all forms of energy can achieve a real reduction in greenhouse gas emissions.

⁽¹⁾ See the decision of the UN's 13th Meeting of the Conference of the Parties to the Framework Convention on Climate Change — the Bali Action Plan.

1.9 The analysis of the present, very unsatisfactory, situation is remarkably succinct and pertinent, quite rightly pointing to organisational and administrative problems that society must tackle alongside the scientific and technological ones.

1.10 Recommendations at EU level urge that attention and appropriate support be devoted to technologies using renewables, clean energy technologies for heating and the latest infrastructure for distributing and storing energy. For the time being, however, some forms of renewable energy are very costly and will continue to be so far into the future. Unfortunately, energy-saving technologies for end-use consumption, clean fossil fuel technologies, nuclear energy (both fission and fusion) and safe storage of nuclear waste are relegated to the sidelines. It should not be forgotten that many countries are dependent on fossil fuels and nuclear energy and this dependency will continue into the foreseeable future.

1.11 Heavy private-sector involvement is, in the EESC's view, absolutely crucial. The EU and the governments of the Member States must provide the necessary environment for this, not only by defining the principles, priorities and goals of energy policies, but also by creating the instruments to help meet these.

1.12 The key element is to establish market rules in the energy sector, especially the correct incorporation of externalities, including social costs, in the prices of all forms of energy. The EU and the Member States will probably have to create a legislative and fiscal environment to ensure a better combination of public and private funding in energy research and development.

1.13 The feasibility of each Member State using renewable energy sources and being involved in programmes to develop energy technologies should be assessed on its natural environment and physically accessible resources.

1.14 Progress in advanced energy technologies for the consumer must be put at the service of sustainable development. A strategic coordination of energy research and development which sets content and scheduling priorities at Community and Member State levels, together with the necessary operational mechanisms such as systems for management, monitoring and information flows, can go a long way to achieving the desired goals.

1.15 In extending cooperation in the research and development of new energy technologies beyond the Community, priority should be given — before new agreements are concluded — to making the best use of existing institutions,

contracts and agreements, especially those that have proved their worth.

1.16 The SET-Plan is a key strategic approach of the European economy in developing and bringing on stream the technologies needed to curb climate change by cutting greenhouse gas emissions by 2020 and beyond to 2050.

2. Introduction

2.1 On 22 November 2007, the Commission issued a proposal entitled A European Strategic Energy Technology Plan (SET-Plan) COM(2007) 723 — 'Towards a low carbon future', together with the working documents 'Full impact assessment' SEC(2007) 1508, 'Summary Impact Assessment' SEC(2007) 1509, 'Technology Map' SEC(2007) 1510, and 'Capacities Map' SEC(2007) 1511. This set of documents contains the background to the SET-Plan and resources which are available and must be mobilised to achieve its aims. Together they constitute an urgent appeal for closer and more coordinated collaboration on research and development at all levels ⁽²⁾.

2.2 This is a strategic approach in one of the key areas of endeavour (if not the key area) to reduce climate change by cutting greenhouse gas emissions — specifically by 20 % in the EU by 2020, and possibly by 30 % if the world community joins the EU initiative. These core aims in the fight against climate change were set out by the European Council, together with the main political substance of the Energy Policy for Europe, on 9 March 2007.

2.3 Enormous advances in energy technology will be needed to stabilise atmospheric carbon dioxide concentrations at acceptable level. There is no question about whether technological innovation is necessary — it is. The question is to what degree should policy focus directly on motivating such innovation ⁽³⁾? The complacency with 'technology already available' is extremely dangerous and the SET Plan, thoroughly projected and implemented, is the basic appropriate choice to achieve the required reduction targets.

3. Commission documents

3.1 Europe needs to act now, together, to deliver sustainable, secure and competitive energy. Harnessing technologies is vital to achieve the Energy Policy for Europe objectives adopted by the European Council on 9 March 2007. To meet the targets, we need to lower the cost of clean energy and put EU industry at the forefront of the rapidly growing low carbon technology

⁽²⁾ The EESC has issued a number of highly pertinent opinions on this issue, such as OJ C 241, 7.10.2002, p. 13 Research and Energy, which have lost nothing of their relevance.

⁽³⁾ Pielke, R.Jr at al, Dangerous assumptions, Nature, Vol. 452/3 p. 531, 532, 3 April 2008.

sector. In the longer term, new generations of technologies have to be developed through breakthroughs in research if we are to meet the greater ambition of reducing our greenhouse gas emissions by 60-80 % by 2050.

3.2 Current trends and their projections into the future show that we are not on a pathway to meet our energy policy objectives. The easy availability of resources has not only left us dependent on fossil fuels, but has also tempered the interest in innovation and investment in new energy technologies. Public and private energy research budgets in the EU have declined substantially since peaking in the 1980s in response to the energy price shocks. This has led to an accumulated under-investment in capacities and infrastructures. If EU governments were investing today at the same rate as in 1980, the total EU public expenditure for the development of energy technologies would be four times the current level of investment of around 2.5 billion euros per year.

3.3 The market take-up of new energy technologies is additionally hampered by the commodity nature of energy. Legal and administrative barriers complete this innovation-averse framework. Public intervention to support energy innovation is thus both necessary and justified.

3.4 The main global players, the United States and Japan, but also emerging economies such as China, India and Brazil, are facing the same challenges and are multiplying their efforts. Their market size, investment and research capacities far exceed those of most Member States. Fragmentation, multiple non-aligned research strategies and sub-critical capacities remain a prevailing characteristic of the EU research base. If we fall behind in the intensifying global race to win low carbon technology markets, we may need to rely on imported technologies to meet our targets, missing out on huge commercial opportunities for EU businesses.

3.5 The transition to a low carbon economy will take decades and touch every sector of the economy, but we cannot afford to delay action. Decisions taken over the next 10-15 years will have profound consequences for energy security, for climate change, for growth and jobs in Europe.

3.6 First and foremost, we need a step change in efficiency in energy conversion, supply and end-use. In transport, buildings and industry, available technology opportunities must be turned into business opportunities. We need to fully harness the potential for information and communication technologies and

organisational innovation, as well as use public policy and market-based instruments ⁽⁴⁾ to manage demand and encourage new markets.

3.7 The Commission states in its documents that many of the technologies that will contribute to achieving the 2020 targets are already available today or in the final stages of development. According to even the most optimistic scenarios, however, it will still take considerable time to bring available technologies on stream and low-carbon technologies in general remain expensive and face market penetration obstacles. A twin-track approach is therefore needed: reinforced research to lower costs and improve performance; and pro-active support measures to create business opportunities, stimulate market development and address the non-technological barriers that discourage innovation and the market deployment of efficient and low-carbon technologies.

To achieve the vision of carbon-free technologies for 2050, we need to develop a new generation of these technologies through major breakthroughs in research. Even if some of these technologies will have little impact by 2020, it is vital that we reinforce efforts today to ensure that they come on-stream as early as possible.

3.8 Existing measures taken over recent years could serve as a foundation for further EU action: (i) the creation of European Technology Platforms, (ii) use of the European Research Area (ERA)-Net instrument for common research programming between Member States, and (iii) collaboration between research centres in specific fields through the Networks of Excellence. The SET-Plan will focus, strengthen and give coherence to the overall effort in Europe, with the objective of accelerating innovation in cutting edge European low carbon technologies. The SET-Plan proposes to deliver the following results: (i) a new joint strategic planning, (ii) a more effective implementation, (iii) an increase in resources, and (iv) a new and reinforced approach to international cooperation.

3.9 A new way of working at Community level requires an inclusive, dynamic and flexible means of guiding this process, defining priorities and proposing actions — a collective approach to strategic planning. Stakeholders have to start to communicate and take decisions in a more structured and mission-oriented way, conceiving and implementing actions together with the EC within a cooperative framework. To steer the implementation of the SET-Plan, reinforcing the coherence between national, European and international efforts, the Commission will establish a Steering Group on Strategic Energy Technologies in 2008. The Commission will organise a European Energy Technology Summit in the first half of 2009.

⁽⁴⁾ COM(2007)140 of 28.3.2007, Green Paper on market based instruments for environment and related policy purposes.

3.10 Effective strategic planning in the Steering Group requires regular and reliable information and data. Commission will establish an open-access information and knowledge management system. It will include 'technology mapping' and 'capacities mapping' developed by the Commission's Joint Research Centre ⁽⁵⁾.

3.11 To accelerate the development and market introduction processes we need more focussed and powerful mechanisms that can leverage the potential of public intervention, European industry and researchers. The mechanisms are these: (i) European Industrial Initiatives, (ii) the European Energy Research Alliance, and (iii) Trans-European energy networks and systems of the future.

3.12 Encouraging more focus and coordination between different funding schemes and sources will help to optimise investment, build capacity and ensure a continuity of funding for technologies in different phases of development. Two challenges need to be addressed: **mobilising additional financial resources**, for research and related infrastructures, industrial-scale demonstration and market replication projects; and **education and training** to deliver the quantity and quality of human resources required to take full advantage of the technology opportunities that the European energy policy will create.

3.13 The Commission intends to present a **Communication on financing low carbon technologies** at the end of 2008. Member States' own actions to increase the human resource base should be better coordinated to maximise synergies and increase mobility in the sector.

3.14 The measures proposed in the SET-Plan should bring about a reinforced international cooperation strategy. We also need to ensure that the EU increasingly speaks with one voice in international fora, where appropriate, to achieve a more coherent and stronger partnership effect.

3.15 Today, the energy technology innovation process is based on national programmes and incentives, using national resources to meet national objectives and targets. This model fits a bygone era of cheap energy and no carbon constraints. To bring about the dramatic changes in the energy sphere that will be necessary in the 21st century, a new policy needs to be pursued.

4. General points

4.1 The EESC welcomes the Commission's Communication and accompanying working documents and concurs with the analysis and description of the position regarding energy technologies. Responding to the risks of global climate change while

continuing to meet the high energy demands of mature economies and the rapidly increasing energy demands of developing economies is a significant international challenge. Without a sound strategy to develop and implement more economical and efficient energy technologies, any thought of curbing climate change is seriously undermined.

4.2 The Communication adds considerable weight to a key element of energy policy — a secure energy supply that is both viable and socially and environmentally sustainable. Security of supply means not just the physical availability of supplies, but also their availability at socially acceptable prices.

4.3 The Commission's Communication quite rightly puts the development of energy technologies at the forefront of efforts to rein in climate change, a position which echoes the conclusions adopted by the 13th Conference of Parties (COP 13) in Bali in December 2007 ⁽⁶⁾. Collaboration on this front now and in the future should also be made an EU priority, not least in view of the potential opportunities for Europe's economy afforded by the expansion of the necessary technologies.

4.4 The Commission's Communication is perfectly correct in drawing attention to the vital importance of time in implementing the proposed strategy (the SET-Plan) if the EU is to fulfil its March 2007 pledge of reducing greenhouse gas emissions by 2020. Unless there is an acceleration in organisation and in the final analysis of basic strategic approaches for the development of technologies (including taking on board the main strategic directions of development and research in the USA and Japan), it will be impossible to concentrate efforts and resources effectively to manage the first stage to 2020, let alone the second stage up to 2050.

4.5 If the EU is to speed up development and the practical application of new energy technologies, it requires more targeted and effective mechanisms which enlist the potential of public funding, industry, universities and research and boost the synergy between them. Europe has strong national research institutes for energy, as well as outstanding research teams working in universities and specialised centres. Regrettably, their work is not coordinated and the instruments so far used to steer their collaboration are inadequate. Exploiting this potential to the full is crucial to the success of the proposed plan. Wider collaboration is also required at the international level.

⁽⁵⁾ See Commission Staff Working Documents SEC(2007)1510 'Technology Map' and SEC(2007)1511 'Capacities Map'.

⁽⁶⁾ See the decision of the UN's 13th Meeting of the Conference of the Parties to the Framework Convention on Climate Change — the Bali Action Plan.

4.6 The EESC greatly values the position taken by the Commission in its Communication of urging financial, but above all human, resources to be mobilised at all four levels: the private sector, Member State level, Community level and world-wide. Thus far, conflicting priorities and protracted procedures have hampered mobilisation of funding. The proposed SET-plan must foster a change in attitudes and an acceleration in the decision-making process. Despite the fact that mobilising human resources — never a speedy process — is also a part of the Lisbon Strategy, efforts to find the human resources needed to implement proposed strategies are still inadequate and too slow. The first prerequisite for mobilising human resources is support across the board for education in science and technology.

4.7 The EESC notes that it is vital to come to an agreement not only on the visions, priorities and aims of energy policy, but also on a strategic plan for energy technologies.

4.8 The Committee thinks it would be detrimental if what is incontestably the most important instrument for curbing climate change — a strategy for the development and application of energy technologies — were to be overshadowed by other issues and instruments which, realistically speaking, must instead provide an important support framework for this development (EU ETS, support for the use of renewable energy sources, the Third Energy Package, etc.). Only a true shift toward more effective technologies in both energy production and consumption, can achieve a real reduction in greenhouse gas emissions. One source of funding for technological development could be the auctioning of EU ETS allowances, assuming the proposal to introduce this procedure is adopted. However, on no account must this be the only source of funding, especially if it only comes into operation effectively in 2013.

5. Special comments

5.1 The analysis of the present, very unsatisfactory, situation is remarkably succinct and pertinent, quite rightly pointing to organisational and administrative problems that society must tackle alongside the scientific and technological ones.

5.2 The premise underlying EU documents dealing with energy technologies is that there is no single energy technology — or even a few — that can have an important influence on progress in the energy field and help achieve the goals set out. On the contrary, there are many, and results will be achieved only by enlisting all of them. None that holds at least some promise should be dismissed out of hand without thorough examination, though those that offer the least should be jettisoned as quickly as possible so that resources are not needlessly

squandered. Each Member State, and possibly every region, should be allowed to choose its priorities within the adopted strategic framework based on its expertise, experience and capacity for implementation.

5.3 Documents on this issue at EU level recommend that attention be given to technologies using renewables, clean heat energy technologies (including heat for producing electricity) and the latest infrastructure for distributing and storing energy. The EESC endorses these priorities. However, clean fossil fuel technologies, which will remain the most important primary energy source well into the future, nuclear energy (both fission and fusion) and safe storage of nuclear waste must continue to be an intrinsic part of the EU's research and development portfolio and must not be neglected.

5.4 The EESC agrees that the energy market has so far failed to provide energy policy-makers, governments and private investors with clear information on the urgency of developing new energy technologies because the costs of the various types of energy and fuels do not sufficiently include all the externalities, including social costs. This is also why there have still been no agreements at EU level on the priorities of energy research and development and on creating the funding and other instruments to support these priorities.

5.5 The EESC thinks that the strategic plan should include not only the setting of priorities at EU level, but also the effectively coordinated and swift establishment of specific priorities at Member State level, the allocation of sufficient funds from public finances, the optimum use of research and development capacities and private sector involvement encouraged by sufficient stimuli from the energy market, as well as other legal and fiscal instruments. It is absolutely vital that the private sector be heavily involved. The EU and the governments of the Member States must provide the necessary environment for this, not only by defining the principles, priorities and goals of energy policies, but also by creating the practical instruments to help meet these.

5.6 The key element is to establish market rules in the energy sector, especially the correct incorporation of externalities, including social costs, in energy prices, which will result in the market sending early signals to private investors and operators about the need for technological change to ensure the most effective use of different energy sources. The EU and the Member States will probably have to create a legislative and fiscal environment, including voluntary mechanisms, to ensure a better combination of public and private funding in energy research and development leading to greater use of resources.

5.7 There are not inconsiderable prospects for some countries with favourable natural conditions to make swifter progress in increasing the use of renewable sources of energy. But there are also countries which do not have such conditions or cannot exploit them economically. The feasibility of each Member State using renewable energy sources and being involved in programmes to develop energy technologies should be assessed on its natural environment and physically accessible resources.

5.8 The Committee finds the priorities set out in the Commission's Communication on the SET-Plan to be somewhat limited, particularly regarding renewable energy sources. They are no doubt important for increasing security of energy supply, lessening Member States' reliance on energy imports and for sustainability of development. For the time being, however, some forms of renewable energy are very costly and will continue to be so far into the future. Similarly, the integration of the energy market is not solely a matter of policy and organisation, but will also require the necessary research and development — into intelligent networks, for example.

5.9 It should not be forgotten that many countries are dependent on fossil fuels and nuclear energy and this dependency will continue into the foreseeable future. The same is true of third countries and the EU should coordinate its efforts with them to speed up research and development in energy technologies. For this reason, the EESC thinks the EU's priorities must not be focused predominantly on renewable energy technologies, since energy-saving technologies for end-use consumption

and clean technologies based on fossil fuels (including carbon capture and storage) are equally important. The EU has a special agenda and regime for research and development regarding nuclear technologies. However, it is important to stress the need for research and development into energy from nuclear fission and — perhaps in the future — fusion and into the longevity and safety of nuclear plants, since these could have a lot to offer in terms of security of energy supply and reduction of greenhouse gas emissions in the EU.

5.10 Of course, efforts to save energy in both its transformation and end consumption can make a large contribution to sustainable development, as can progress in advanced energy technologies. At EU level, better use of available financial and human resources in this very broad area can be facilitated by a properly devised and pursued strategic coordination of energy research and development which sets content and scheduling priorities at Community and Member State levels, together with the necessary operational mechanisms such as systems for management, monitoring and information flows. Effective standardisation of procedures and plants will also play a vital role.

5.11 In extending cooperation in the research and development of new energy technologies beyond the Community, priority should be given — before new agreements are concluded — to making the best use of existing institutions, contracts and agreements, especially those that have proved their worth.

Brussels, 9 July 2008.

The President
of the European Economic and Social Committee
Dimitris DIMITRIADIS
