

EUROGIA2020



A EUREKA initiative

For Low Carbon Energy Technologies



WHITE BOOK



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**Foreword: Letter to EUREKA NPC and HLG Members**29<sup>th</sup> May 2013

Dear Madams, dear Sirs,

Following on our presentations to the NPCs at the Kayseri meetings, we are in the final process of submitting an application for **EUROGIA2020**, our 7-years **EUREKA initiative for Low-Carbon Energy Technologies**.

EUROGIA2020 is not only the continuation of EUROGIA+, the EUREKA Cluster for Energy, running during the last 5 years, but it will address all the required transformations of world energy system to make it more sustainable. Accelerating technology developments in low carbon energy technologies is indispensable both for climate goals in the next period and for positioning Europe for an economic resurgence.

This EUROGIA2020 White Book takes into account both the evolution of the world energy system and fresh thinking on the best tools to achieve our goal of transforming it into a low-carbon system.

In order to address the challenges that the current world energy system is facing, EUROGIA2020 must promote:

- Innovative Solutions that will satisfy the growing energy demand
- Enablers that reduce the negative impacts of energy consumption
- New technologies that give access to affordable as well as cleaner and safer energy.

The EUROGIA2020 Board believes that, during the former EUROGIA+ mandate, we have only been able to scratch the surface in terms of numbers of companies involved in projects. Therefore, a key goal for EUROGIA2020 will be to significantly grow the number of projects.

Your assistance is needed to achieve our ambitious goals. The industry is ready, the scientific world too. Your support will give access to the necessary funding to make EUROGIA2020 a fantastic success of public/private collaborative actions for industry-driven, market-oriented projects answering key societal issues.

We look forward to your continuing support for the EUROGIA2020 7-years mandate, and beyond.

Raul Manzananas Ochagavia,  
Chairman

## **VISION & MISSION**

**EUROGIA2020** is not just the continuation of EUROGIA+, the EUREKA Cluster for low carbon energy technologies, running during the last 5 years: it intends to lead the revolution of the energy transition.

While EUROGIA+ focused on the required transformation of the world energy system to make it more sustainable, EUROGIA2020 will go beyond by addressing the societal challenges that Europe and the World are facing:

- Climate change and environmental issues
- Economic crisis and jobs destruction in Europe
- Competitiveness through optimized use of fossil fuels, renewable energy sources and energy efficiency

Our world is changing:

- Energy consumers are becoming energy producers (e.g. positive energy buildings)
- Public acceptance has become key for all industrial projects
- Citizens' concerns for sustainability of the energy system, in all its dimensions (environment and climate change, robustness and security of supply, cost effectiveness ) are ever growing

To respond to these challenges and achieve the required major transformation in the world energy system, new technologies are urgently needed in the market place. The whole energy sector must join efforts and work together towards technologies to provide affordable, clean, safe and sustainable energy. Expertise and competencies need to be coordinated on a large scale, as they are available in various countries and industry sectors. EUROGIA2020 is designed as THE tool to be used in this perspective.

Energy represents about 10% of world GDP. Annual investment in energy supply infrastructure alone represents more than 1 trillion dollars, and is poised to increase further,

with an annual average of 1.6 trillion dollars expected between now and 2035, according to the International Energy Agency.

It is critical for Europe to at least preserve its market share of this giant market at a time when emerging countries such as China are investing massively in low carbon energy technologies R&D, and when North America is ongoing its own energy revolution driven by new shale gas technologies, increasing the competitiveness of entire economic sectors. The period 2013-2020 will be particularly critical in putting Europe back on track to achieve its long term climate goal. The 20/20/20 objectives are likely to be achieved but require tapping only the low hanging fruits (and are being helped by a major economic slow-down).

As the only European programme covering the entire energy value chain, EUROGIA2020 will be THE tool to turn the climate change challenge into an opportunity to create the jobs that will help prevent the dire consequences of increasing Greenhouse Gas (GHG) emissions. We want EUROGIA2020 to be the real full energy mix program, without any restriction, but with the fundamental principle to produce and consume energy respectfully of the environment. This includes:

- Making renewable energy sources truly economic and robust, solving the intermittency issue with novel energy storage and energy conversion technologies
- Reducing GHG emissions and making use of the more than 30 Gt of CO<sub>2</sub> produced yearly in the world for CCS (Carbon Capture and Storage) and CO<sub>2</sub> valorisation
- Leveraging the new resources of gas, and the traditional resources of coal, to ensure the required transition in the 2 or 3 coming decades is carried out with more efficient, less polluting processes
- Improving energy efficiency and energy management (including positive energy buildings; distributed, coupled and hybrid systems) in all end uses
- Developing energy management with intelligent networks technologies, smart grids and cost effective energy storage on all scales

- Ensuring security of supply for example by making shale gas more environmentally acceptable or providing the mineral resources needed for energy technologies
- Satisfying the continuously growing worldwide demand for energy while achieving a long term decarbonisation of the energy chain, for example through development of supply, transport, storage and use of hydrogen

EUROGIA2020 will bring its brick to the construction of this new world by facilitating access to funding for technology developments and demonstration projects.

This EUROGIA2020 White Book is there to lead the way to the new energy revolution.

Gabriel Marquette  
General Manager

Christian Besson  
Office Director

## Introduction

The move towards a more secure and low carbon energy system requires the development of technologies, products and processes that reduce the carbon emissions from energy production and use. We need to harness cleaner sources of energy, such as wind, solar, biomass, hydro and geothermal and find ways to reduce the carbon footprint of fossil fuels, especially through more efficient production and use. We also need skilled people to develop, install and operate these technologies. Without these developments we will be unable to meet the world's carbon reduction goals and we will have fewer sources of energy to rely upon within our energy mix.

EUROGIA2020 will be dedicated to promoting and facilitating the development of such new technologies.

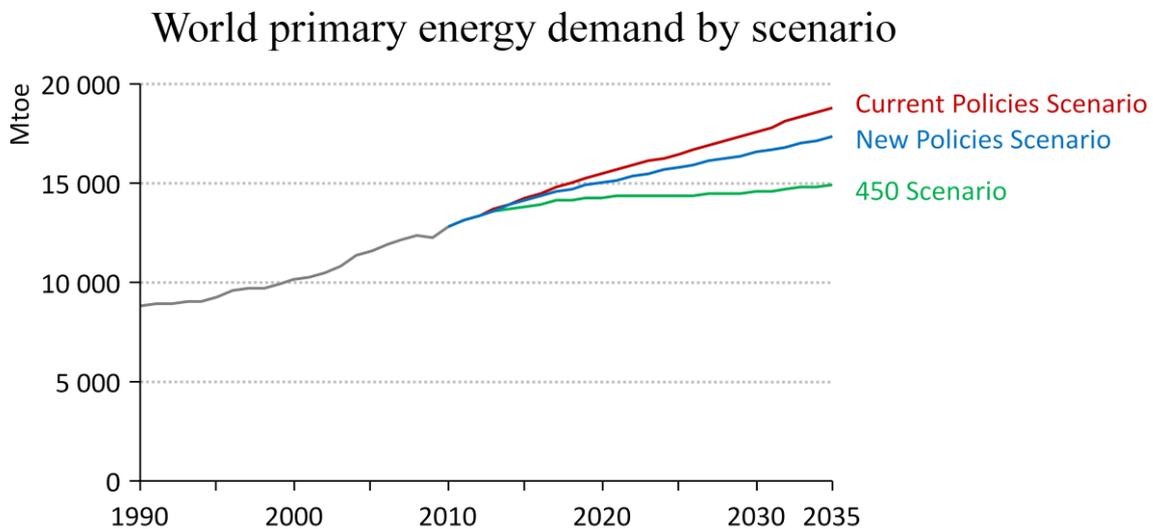
EUROGIA2020 will be led and promoted by a group of European Energy technology firms representing the largest possible markets segments. All energy technologies are included with the exclusion of nuclear. They are supported by the research institutes, public and private, specialised in the accompanying disciplines: geosciences, information technologies, materials, fluid mechanics...

This White Book describes the EUROGIA2020 global vision and the programme overview (**Part 1**), before giving examples of the various technology challenges to be addressed (**Part 2 – Technology Road Map**).

### **1. Energy Outlook**

As documented by many organisations, the world energy system is currently on a path that is not sustainable. Energy demand is forecasted to increase by 40% over the next 25 years as a result of demographic growth and improved living standards in developing countries (Fig. 1, from IEA World Energy Outlook 2012).

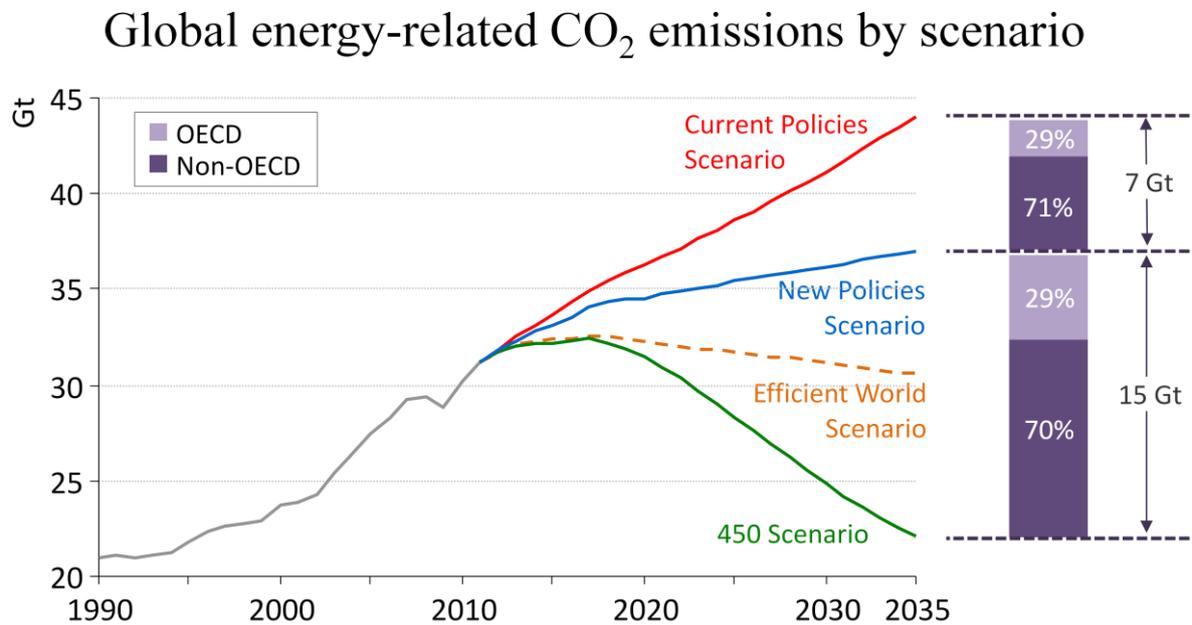
Fig. 1



But unbridled growth brings greenhouse gas emissions that threaten to dramatically alter the environment. For example the Current Policies Scenario of the International Energy Agency (IEA WEO 2012), a scenario in which no new policies are introduced, leads to long-term CO<sub>2</sub> concentration in the atmosphere consistent with a rise in the world's average surface temperature in excess of 6°C. Even if one is not concerned about climate change, such a scenario leads to extreme concentration of energy supply in a small number of exporting countries, with significant concerns about energy supply security for many countries in the world.

Even the IEA New Policies Scenario, based on the Copenhagen and Cancun summits' pledges, is insufficient to bring the world to a 2°C temperature increase trajectory, which is the stated target agreed to in Copenhagen. And that scenario also involves serious security of supply concerns.

Fig. 2



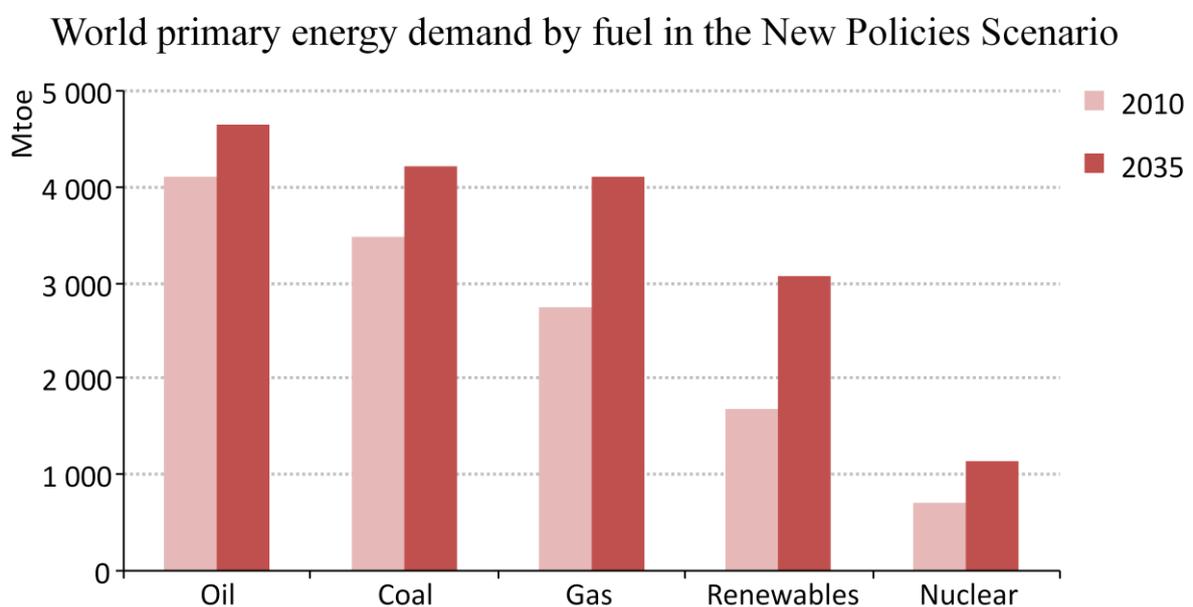
Given the difficulties in reaching legally binding international agreements on greenhouse gas emissions, public policies alone are unlikely to put the world energy system on a more sustainable path: **a major technological transformation is needed.**

Thanks to more proactive public policies and public opinion, Europe has a head-start in this transformation, but China has been rapidly catching up and even overtaking the rest of the world in some areas of renewable energy technologies (e.g. solar PV panels, wind turbines...). The US government has also significantly boosted support to low carbon energy technologies development, as part of its economic recovery package. There is no doubt that a race to lead the low-carbon energy technologies market has started and that staying at the forefront of this race is key to the future prosperity of Europe and its industrial base.

The companies that form EUROGIA2020 are committed to facilitate the technological transformation of the world energy system into a sustainable, low-carbon, system, in which all consumers enjoy security of their energy supply, and to ensure European industry plays a key role in this transformation.

In this transition to a sustainable energy system, more efficient use of energy and renewable energy sources will obviously play the main role, but, due to the sheer size of the world energy system, fossil fuels will continue to dominate for many years to come (Fig.3 from IEA WEO2012). This is why EUROGIA2020 addresses the full energy mix, as described below. The future mix of energy sources will depend on many factors (technological progress, public acceptance, public policies in various countries...). As an industry forum, EUROGIA2020 does not favour any particular solution; every technology that reduces carbon footprint and increases energy supply security is a positive step.

**Fig. 3**



## 2. EUROGIA2020 Global Vision

The availability of economical & clean energy for everyone is vital for future generations to satisfy their needs while securing sustainable development.

Clean energy availability is governed by:

- The efficient harnessing of primary energies (nuclear, renewable, fossil),
- Their high yield conversion to secondary energy (combustibles, electricity, heat),

- The rational distribution & utilisation of secondary energy to/by the Industry, Transport and Residential sectors.

To guarantee the future security of sustainable energy supply, RD&D innovative programmes need to be launched now.

The EUROGIA2020 Cluster is a strategic player, fostering energy transition thanks to its strong industrial network involving many key players in Europe (SMEs, public research centres, universities, international Large Enterprises, etc.). EUROGIA2020 primary instrument is fostering multidisciplinary, innovative, RD&D programmes to build and develop the future energy mix.

EUROGIA2020 RD&D projects can address the following issues (more detailed list of relevant technology challenges can be found in Technology Road Map):

*1. To meet the world's growing fossil fuel needs, while minimizing carbon footprint*

The future energy mix will still be led by hydrocarbon fuels for several decades (Fig. 3 above). Reducing the carbon footprint of fossil fuels production and use is therefore a key component of any technology evolution. But, regardless of the gains to be achieved, reaching the world's greenhouse-gas emission reduction targets will require CO<sub>2</sub> Capture and Storage [CCS]. Technologies are needed that

- a. extend production from existing (mature) oil & gas fields, while reducing the carbon footprint of the extraction industry;
- b. allow industry to explore, discover and develop new oil & gas fields in complex and difficult areas: Arctic, deep and ultra-deep offshore, High Pressure and High Temperature environments, in an environmentally safe and responsible way;
- c. provide access to unconventional hydrocarbons (heavy oil, shale gas, tight oil and sour gas...) in an environmentally responsible way;
- d. encourage responsible management of residual gas (including elimination of flaring), of water, and of pollutants;

- e. support development of Natural gas production, transportation and storage, as a less carbon intensive fuel, e.g. development of offshore Liquefied Natural Gas (LNG); and,
- f. inspire development of low carbon mitigation solutions such as CO<sub>2</sub> Capture and Storage (CCS).

*2. To develop diverse clean energy sources in addition to the fossil fuels*

Ultimately the world needs to move to renewable primary energy sources such as solar, wind, hydro, biomass and geothermal. This requires a very significant reduction in the cost of capturing energy from such sources. Such reduction requires a large number of new technological developments.

Most renewable energy sources are intermittent. Matching the intermittent supply to the needs of the consumers in a reliable and cost effective way also requires significant technological innovations. Thus we must

- a. develop and optimize the use of biomass both for transport and for heat and power;
- b. optimize renewable energy technologies: solar energy, wind, geothermal and hydro power (including waves and tides); and,
- c. develop energy storage and smart grid technologies.

*3. To improve efficiency of energy use in all consumer and industrial applications*

Intensive research into usage efficiency technology can fuel industry in a manner that will consume less energy and emit fewer emissions. Technologies to foster industrial efficiency in the following arenas should have a high priority.

- a. Power plant efficiency
- b. Efficient energy transport and distribution
- c. Energy efficient buildings and appliances
- d. Energy efficient manufacturing processes in all major industries
- e. Energy efficient transportation systems for goods and people

- f. Waste heat capture and valorisation
- g. Combined heat and power applications
- h. Applications which reduce the fuel to power ratio

4. *To keep Europe's market leadership against world-wide competition*

To be more efficient and to strengthen the competitiveness of European industry, it is essential to share on the one hand the management of energy resources, and on the other hand the skills, the means and the experience developed in the different European sectors of energy and other industries.

As an example, for the past 30 years, the European oil and gas service and supply industry, using the North Sea as a challenging testing ground, became an efficient and innovative industry upon which oil and gas companies could rely world-wide. Building on its great marine engineering expertise, the European oil and gas service and supply industry has the capacity to address new challenges such as offshore wind mills, wave and tidal power, carbon capture and storage... For it to achieve this essential goal, a continued effort is needed for a more effective integration and structuring of R&D at European level (France + Norway + UK + Italy + Netherlands + etc.). Such an integration would:

- a. strengthen European technological assets and know-how thanks to R&D investments; and,
- b. stimulate partnerships between European SMEs and large enterprises.

5. *To build a sustainable and effective energy system through interactions between technology and society*

The development of new energy options cannot be performed without a close link with their integration into the social world, taking into account both the environment in which they will be deployed and the behaviour of the consumers who will decide whether or not to adopt the proposed innovations. This requires

- a. societal, technical, economic and environmental evaluation;
- b. public acceptance and social legitimacy; and,
- c. human resources development.

EUROGIA2020 is the only European RD&D programme for the entire energy mix (except Nuclear). Since, across the whole energy industry, technology developers share the same inter-sector, multidisciplinary and systemic approach, all sectors (traditional and renewable energy sources, distribution, efficiency...) will benefit from cross-sharing expertise and rationalizing generic technologies development.

The EUREKA initiative has proven to be successful at structuring R&D at the European level, and beyond, in specific research domains, such as: Microsystems and Packaging, Micro-electronics, Software, Water, and Energy with EUROGIA2020. It has also proven that its industry-driven approach can federate all key players, therefore capitalizing across borders on the expertise of large, medium and small enterprises, all benefiting from both private & public research support.

The specificities of the EUREKA, and therefore EUROGIA2020, initiatives are to be bottom-up, industry driven, close to market and trans-national. EUROGIA2020 is convinced that trans-national R&D cooperation is the key to Europe's competitiveness.

For individual companies faced with the development of new technologies, EUROGIA2020:

- brings together the key European actors in the global market, thus new, European-influenced, technical standards can be more easily established;
- reduces both the financial risks and the risks associated with the selection of venture partners; and,
- provides an early opportunity to review their R&D projects with representatives of other key industrial companies, the various EU national funding authorities, as well as public research institutes and universities.

Moreover, only through large, focused, industry-driven initiatives such as EUROGIA2020 can the critical mass be obtained to achieve a large return on the investment of public funds. The EUROGIA2020 programme brings together the major industrial players, public institutes and universities behind a common set of goals.

### 3. EUROGIA2020 Implementation Strategy

EUROGIA2020 implements its global vision through a series of actions:

- promotion of low-carbon energy technologies through intervention in public fora;
- fostering new collaborative RD&D projects in its domains of activity;
- maintaining a network of industrial and academic contacts to facilitate the RD&D projects in low carbon energy technologies; and,
- granting a Quality Label to proposed RD&D collaborative projects. This is intended to facilitate obtaining public authorities support for such projects. It is done mostly within the framework of the EUREKA programme: EUROGIA2020 grant the EUREKA label to low carbon energy technology RD&D projects.

To this effect, EUROGIA2020 builds expert groups in the following domains:

- **Sources of energy**
  - Biomass
  - Solar
  - Wind
  - Hydro
  - Geothermal
  - Waves and tides
  - Hydrogen
  - Oil and gas
  - Methane hydrates
- **Enabling technologies**
  - Energy efficiency
  - CO2 mitigation
  - New materials
  - Information and communication technologies (ICT)
  - Process improvement
  - Tools, fabrication and installation
  - Education and training
  - Health, Safety and Environment

Within EUROGIA2020, these expert groups facilitate the organisation of ad-hoc consortia for developing RD&D joint industry projects along the lines of the themes described above.

### 3.1 Projects

Projects are defined and prepared by consortia, formed by industry (not limited to the companies which participated actively in the programme's definition), universities and research laboratories.

Project selection, carried out by the EUROGIA2020 organisation as per EUREKA prevailing rules, is based on criteria such as the quality of the consortium (vertical and horizontal partnerships, involvement of SMEs), the expected deliverables, the degree of technological innovation, the market perspectives, as well as the impact on standards, or on advanced research in academia.

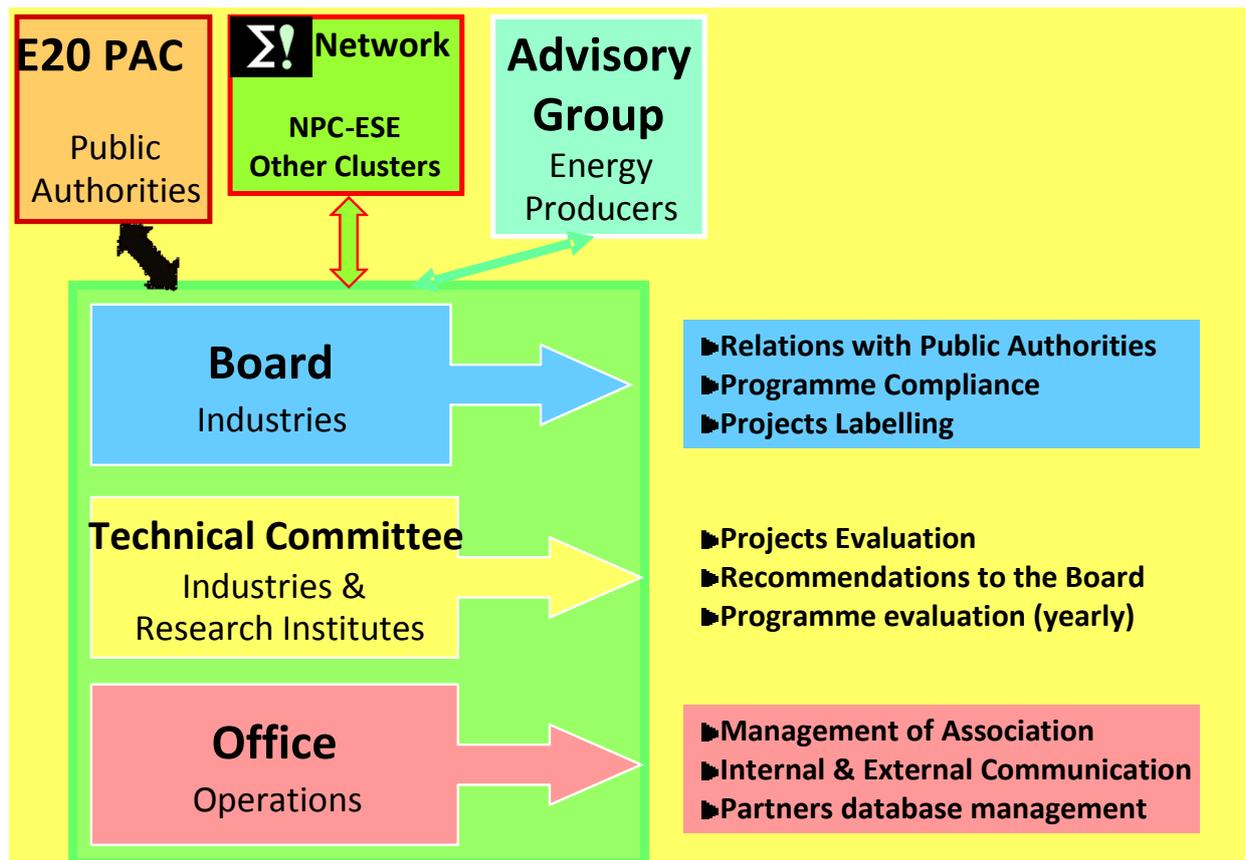
A 2-steps procedure (Project Outline, then Full Project Proposal) for project proposal submission and evaluation has been adopted and is fully described on the EUROGIA2020 website. The process can be described as **light, fast and interactive**. The last point is the most important: through face-to-face interactions with the evaluation committee and support from the EUROGIA2020 office, project proposers receive constructive feedback on how to improve their projects. The goal of EUROGIA2020 is to foster high quality projects to develop or enhance low carbon energy technologies. EUROGIA2020 is committed to the success of the projects it labels, and therefore also provides assistance and support, during the execution of the projects, for conflict resolution, project modification, etc. A rigorous process has been put in place to ensure confidentiality of project information at all stages from submission through evaluation, and support during execution.

### 3.2 EUROGIA2020 Organisation

To achieve its goals, EUROGIA2020 has the following structures:

- Board of directors: member companies representing all participating countries and all industry segments relevant to EUROGIA2020 sit on the Board of directors, and decide on broad directions of all actions of the association;

- Executive Committee: composed of representatives of the member companies elected by the Board, it implements the actions of EUROGIA2020 on a day to day basis; it liaises regularly with Public Authorities of participating countries;
- Office: a small cadre of permanent staff supports the Executive Committee in implementing the programme. In particular it provides guidance for proposers for both consortium constitution and work content.
- Technical Committee: composed of representatives of member companies and of selected academics, it is the most important structure of EUROGIA2020: its technical strengths and integrity are the basis for recognition of the EUROGIA2020 quality label. The Technical Committee typically consists of an equal number of evaluators selected from industry on the one hand and universities/ research institutes on the other hand.
- General Assembly: composed of all member companies and all project participants, it approves major changes in the way the association operates.
- Advisory Group: composed of high level representatives of major European energy companies, basically representing the “end-users” of energy technologies, it advises on key market trends and future needs.
- E20 PAC: EUROGIA2020 Public Authorities Committee; composed of representatives from the public authorities of participating countries, it provides a forum for information and exchanges about the strategies of individual countries and how they connect to the projects.



### 3.3 Priority Domains

EUROGIA2020 is a bottom-up, industry driven initiative. As such, it does not “pick” technology winners; the market ultimately decides. However, since one of its key goals is to help industry leverage public funding to reduce risks in innovative projects, it focuses primarily on projects aligned with the priority domains of the public authorities of the participating countries. Maintaining the right balance between the bottom-up approach and these priority domains is achieved through regular interactions with the public authorities of these countries.

A list of relevant domains and technology roadmap can be found in part 2. This is intended as an illustrative, non-exhaustive, list, indeed, the energy system will evolve based on many different factors (technology, economics, public acceptance, public policies...) and the respective timings of various evolutions cannot be predicted easily.

### **3.4 Master Projects**

Enhanced visibility for specific topics, or for specific opportunities for both project proposers and public and governing bodies, will be brought by defining large scale Master Projects. The advertisement of such master projects helps focus the attention of project proposers on topics that are priorities for a subset of the national governments and where good complementarity between countries can be anticipated.

EUROGIA+ launched one master project: Marine Renewable Energies, focused on the complementarity between French marine expertise and the developing marine renewable energy Spanish market.

Master Project initiatives will be launched during EUROGIA2020 as appropriate, based on industry and public authorities' interest.

### **3.5 Role of partners**

Although EUROGIA2020 does not exclude any consortia that meet the criteria for the quality label, experience has shown that the right combination of Large Enterprises, SMEs and research institutes often enhances the benefits of collaborative projects.

*Large enterprises* bring:

- their knowledge of business requirements on a world-wide level;
- a world-wide market base to commercialise the products resulting from collaborative RD&D projects;
- solidity of financial participation;
- a critical mass to support project management and administration; and,
- multidisciplinary expertise that will contribute, inter alia, to the training of young engineers and researchers.

They also avail to SMEs their world-wide contacts, providing those companies with new business opportunities as well as close and long-lasting relations with academia.

The *SMEs* participating in EUROGIA2020 projects bring:

- their highly focused know-how and capacity at developing enabling technologies;
- their local market knowledge; and,
- the necessary flexibility in terms of available resources and competences.

SMEs benefit from joint industry projects with Large Enterprises in terms of sharing technology know-how, business development, access to world-wide markets, employment and training. Because of their ability to adapt faster than larger companies to business changes, SMEs account for an important share of industrial growth.

It has been clearly demonstrated in past programmes that SMEs make important contributions in reaching common R&D objectives with the larger companies.

#### *Research Institutes and Universities*

Although university/industry co-operation in research is well developed throughout Europe, it often remains local and regional or, at best, national. Co-operation at the European level and beyond has been encouraged and works fine but rarely involves all of the supply chain actors. EUROGIA2020 trans-national RD&D projects offer significant opportunities to develop links between academia and industrial partners that do not have a tradition of working with universities.

Universities and research institutes are science providers for the industry and take charge of most fundamental research efforts. By working on challenging projects with the industry, universities and research institutes are able to attract and train excellent students and researchers for careers in both academia and industry.

A more extensive and systematic trans-European university/enterprise co-operation in R&D will guarantee education and training of European research teams and development of a much needed critical mass of talented employees and training opportunities.

The participation of trainee students and researchers in international projects will accelerate their access to first employment.

### **3.6 EUROGIA2020 and relationships with others Programmes**

EUROGIA2020 has relationships with others programmes at different levels:

#### *Regional level*

In France with the Pôles de Compétitivité (Competitiveness Clusters for "New Technologies") involved in energy:

- TENERDIS-Rhône Alpes
- CapEnergies-PACA
- DERBI-Languedoc Roussillon
- S2E2-Centre
- Mer Bretagne
- Mer PACA

EUROGIA2020 is also developing privileged links with Kompetenzenetze in Germany. Bilateral actions are also developed between France & Norway through the link with Fondation Franco-Norvégienne. Similar process will be implemented with similar networks, for example Poland Technology Platforms.

#### *National level*

EUROGIA2020 has privileged contacts with national programmes of the main EUROGIA2020 supporting countries (France, Spain and Norway in particular). Efforts will be to achieve the same privileged contacts in Germany, the UK, Turkey, Israel, Hungary, Poland, and Estonia; the objective being to have EUROGIA2020 as a facilitator to channel the best quality projects to national authorities running joint calls (Ex: ANR-NKTH, ANR-COORETEC, ANR-CLIMIT).

#### *European level & International Projects*

In Europe, EUROGIA2020 relies on European Technology Platforms with which relationships have been established since EUROGIA+: ZEP, Biofuels, SmartGrids, TPWind, PhotoVoltaics, ECTP, WATERBORNE, ERTRAC, ETP SMR. EUROGIA2020 brings its capacity to achieve part of the technological developments identified in their Strategic Research Agendas.

EUROGIA2020 collaborates closely with Renewable Heating and Cooling Technology Platform through the memorandum signed by both parts.

#### **4. Conclusion**

In the context of the imperative major transformation of the world energy system in the next 3 decades, driven both by climate change and energy security concerns, there is an urgent need for high quality RD&D projects in the field of low carbon energy technologies.

EUROGIA2020 is an initiative driven by European energy technology providers to help achieve this major transformation, in particular through fostering trans-national collaborative RD&D projects. This initiative strengthens Europe's position at developing critical technologies for an efficient, environmentally and socially responsible exploitation of the complete Energy Mix.

EUROGIA2020 helps European technology providers to the energy industry in:

- reducing their financial and technical risks associated with development of new products and services;
- accelerating their time-to-market for such new products or services; and
- improving their competitiveness with respect to competitors from other parts of the world.

Public authorities in a number of countries declared their support to EUROGIA2020 program because:

- it contributes to Europe's economy, its trade balance and the employment of skilled workers;
- it contributes to Universities' excellence in a wide variety of disciplines;
- it concerns a diverse and geographically distributed supply chain with a large number of SMEs;

- it produces a European-wide knowledge based community, a “knowledge factory”;
- the EUROGIA2020 network serves as the basis for a co-ordinated strategy of education and training, facilitating the development of IT based learning processes and tools to support and develop the “knowledge factory”;
- because of the excitement of transforming the world energy system in a sustainable way, it attracts more young people towards learning science and studying in Technical Universities;
- Europe can expect best-in-class technologies at home and a stronger market position worldwide, with a continued recognition for its expertise; and
- as has been demonstrated in the recent past, cross-fertilization between industries and other activities benefits from the results of RD&D in this multi-disciplinary, worldwide Energy Mix industry.

EUROGIA2020 has strong capabilities in fostering exciting RD&D projects in low carbon energy technologies. It is based on an excellent organisation and a recognised processes. It assembles a world-class cadre of evaluators for its Technical Committee. But much remains to be done. EUROGIA2020 intends to enlarge our membership, strengthen support from public authorities in more countries, foster projects in many additional sub-fields of the EUROGIA2020 domain, and extend our network.