A. GENERAL POLICY APPROACH
In light of the results of recent communications on a Roadmap to a low carbon economy and transport white paper as well as the Energy 2050 Roadmap:

A.1. Is there a role for new targets for renewable energy sources post-2020 assuming that any targets must be consistent with climate mitigation and energy efficiency policies and targets as is currently the case with the 20/20/20 targets in the Europe 2020 strategy?

☐ Yes, a mandatory target at EU level is appropriate
☐ Yes, an indicative and non-legally binding target at EU level is appropriate
☑ Yes, sectoral targets (e.g. electricity, transport, heating and cooling) are appropriate
☐ Yes, a combination of EU and sectoral level targets is appropriate
☐ No, targets for renewable energy sources are unnecessary

A.1.1. Please explain the reasons for your answer (such as the scope and contribution from GHG targets/ETS, the need to address other environmental, security of supply or technological development benefits) (optional) (maximum 1500 characters; count: 0)

A combination of EU and sectoral level targets is appropriate, but only if targets are mandatory.

Renewable energy is crucial to achieve the EU’s objective of reducing GHG emissions by 80-95% by 2050. It is also key to re-launch job growth and local competitiveness, with geothermal requiring local labour force (more than 80% of the value chain is European), with no risk of relocation.

The 20% target set in the RES Directive is paving the way for new investments in green technologies, including innovative geothermal systems. Binding targets for 2030, however, are of utmost importance to give more certainty to investors and to ensure a level-playing field with other, highly-subsidised, energy sources, e.g. nuclear, fossil fuels.
A combination of EU and sectoral targets in a post-2020 framework should be mandatory and complemented by GHG emission reduction targets as they are interlinked and mutually reinforcing. Furthermore, they should not be limited to a 30% share, as envisaged in the Commission’s Energy Roadmap 2050. Such a 30% would actually correspond to business as usual.

All sectors are critical to achieve the EU’s energy and climate goals. Nevertheless, it is clear that the potential contribution of renewable heating and cooling has been underestimated in the NREAPs. This is also reflected in the poor financial incentives put in place at national and local level. Sectoral targets would be intended to improve the climate for investments for renewable H&C technologies.

A.2. Are other policy elements necessary to promote renewable energy post-2020, such as: (optional)
- Enhanced focus on R&D to bring down the costs of renewables technologies
- Facilitation policies (faster and easier permitting, improved access to the grid and further grid investments, availability of more sites for renewables, etc)
- Abolition of support mechanism or subsidies to other energy sources
- Public procurement obligations in support of renewables
- Better financing possibilities
- Continue to ensure sustainability and scalability
- Other (please specify)
  - Building obligation
  - Energy Efficiency Targets
  - A strengthened EU Emission Trading Scheme
  - Increasing the renovation rate in the EU

B. FINANCIAL SUPPORT
Member States at present rely on various forms of national support mechanisms to fulfil their national renewable targets for 2020. This section refers to the further development of support mechanisms post-2020.

B.1. Do you consider that financial support will continue to be necessary to support renewables post 2020 given their expected greater penetration? (optional)
- Yes
- No
- For selected technologies/circumstances/markets (please specify)
- N/A

Financial support for geothermal will still be needed in order to reduce costs of innovative
technologies such as EGS and low temperature power plants. In addition, a support for Geothermal heating will be needed as long as external costs of fossil fuels are not internalised and other market distortions are not removed.

It is also worth noting that the financial support to geothermal energy is currently very low, with the exception of Germany and France. Moreover, such a support is in place in only eleven EU member states.

NB: EGS (Enhanced Geothermal Systems), uses the high temperature of rocks with artificial water injection and, generally, with enhancement of permeability of the hot reservoir. An Enhanced Geothermal System is an underground reservoir that has been created or improved artificially.

B.2. If renewable energy sources require support post-2020, how do you think this can best be achieved with a view to achieving a cost-effective deployment? (optional)

- Making support schemes more market-oriented (please specify how)
- Accelerate convergence of national support schemes
- Open up national support schemes to cross-border projects
- Phase out support schemes over time (please specify for which technologies if applicable)

If full market distortions are removed, it is appropriate a switch from feed-in tariffs to feed-in premiums as the specific technology progresses down the learning curve and increases its share on the market. This should be followed by a gradual phase-out of financial support schemes over time but only on a voluntary base and for those technologies achieving grid parity and a larger market share.

B.3. Do you think it would be useful to develop common approaches as regards Member States' financial support for renewables? (optional)

- Yes, with benchmark values for support level per technology per Member State
- Yes, with EU-wide benchmark values for support level per technology
- No, support levels should be entirely up to Member States
- N/A

B.4. Should the structure of financial support be gradually aligned EU-wide? (optional)

- Yes (please explain how this could be achieved and which support structure you consider most suitable)
- No
- N/A
B.5. With regard to questions B.3. and B.4. please specify if you see a difference between the different sectors (electricity, heating and cooling, transport). (optional) (maximum 1500 characters; count: 0)

There is a great difference between electricity and heating and cooling.

Electricity may have a wider European market. In this regard, geothermal electricity should be supported by all EU member states whereas today only 11 EU countries have support schemes (e.g. feed-in tariffs or green certificates) in place for this technology. Similarly, an EU geothermal risk insurance scheme should be developed in order to minimise the geological risk.

On the other hand, the market for heating is based on local markets and supply. Even though an EU heating and cooling policy is necessary to provide a consistent framework, the development of renewable heating and cooling should be driven by stable national or local incentives. This is also to create a level-playing field with fossil fuels, still receiving considerable government subsidies.

In this regard, the UK “Renewable Heat Incentive” is an interesting example, but only to a certain extent. It has actually reproduced the same delay and gap typical of feed-in tariff schemes in the electricity sector. In addition, it is not independent from the state’s budget. Hence, it is not providing much more investor certainty.

B.6. How do you see the relation between support schemes for renewable energy and the requirements of the internal electricity market for the period after 2020 against the background of a rising share of renewables? (optional)

- Member States need to be able to continue to operate support schemes on a national level and retain control over who benefits from national schemes
- Member States need to open their support schemes to renewable generation from other Member States
- Member States should open their support schemes to renewable generation from third countries

B.7. Do national support schemes and differences between such schemes distort competition? (optional)

- No, support schemes do not have a significant distorting impact on competition
- Yes, all support schemes distort competition to a similar extent
- Yes, some support schemes are more distorting than others (please specify which you consider most distorting)
- N/A

This is the case when only certain technologies (e.g. Nuclear, Gas, PV, Wind, etc.) are highly supported in nearly all member states and, for instance, geothermal support schemes are in place in just a few countries, with a lower level of support. The slow development of some RES in certain areas with good resources is mainly due to the complete absence of support schemes. For instance,
feed-in tariffs for geothermal are in place in only eleven EU member states. Feed-in tariff systems in all member states would contribute to a more balanced development of renewable energy in Europe and to the further development of new geothermal technologies, primarily EGS, as it is happening in Germany where such a support mechanism is in place and where 41 new geothermal power plants are currently being developed (Source: EGEC Deep Market Report 2011).

C. ADMINISTRATIVE PROCEDURES

Articles 13 and 14 of the Directive lay down rules on administrative procedures, information and training.

C.1. Which of the following issues relating to administrative procedures, information and training do you consider acting as a serious impediment to further growth of renewables following Member States' implementation of the provisions of the Directive? (optional)

- Length and complexity of administrative procedures relating to authorisation/certification/licensing
- Lack of commonly agreed technical specifications
- Lack of information on support schemes or other
- Lack of credible and certified training and qualification
- Other (please specify)

- Lack of regulatory framework for shallow and deep geothermal, drilling and ownership of resources (see GTRH (www.gtrh.eu) and Geoelec (www.geoelec.eu) projects)

C.1.1. Please provide explanations and specific examples where available (optional) (maximum 1500 characters; count: 0)

- **Length and complexity of administrative procedures:** simplification is key in order to speed-up the timing. The “One stop-shop principle” should be applied everywhere. Furthermore, public authorities should be trained on geothermal as to have some technical background;

- **Lack of information on support schemes:** Geothermal is not supported everywhere so that stakeholders continually investigate for alternative sources of funding; transparency should be applied over support schemes for both conventional and non-conventional sources of energy in order to contribute to create the already mentioned fair level-laying field. For the heating sector the problem is that often only stop & go measures are put in place. The diversity of the support schemes in place represents an additional problem;

- **Lack of credible and certified training and qualification:** Few training courses and certifications are available for geothermal (see Geotrainet project for further information) in order to have a quality and sustainable market.
C.2. Which policy response to the problems identified above do you consider appropriate? (optional)  
- The approach of the current Directive to lay down a general framework for Member State action is fine  
- Strengthen rules to intrude more directly into Member States procedures in terms of roles of different actors (e.g. one-stop-shop), maximum time-frame or other  
- Push for more standardisation and harmonisation on EU level or mutual recognition  
- Other (please specify)  
- N/A

D. GRID INTEGRATION OF ELECTRICITY FROM RENEWABLE ENERGY SOURCES

Article 16 of the Directive lays down a number of binding rules related to network development, access and operation in order to ensure that electricity from renewable energy sources may access the electricity network freely.

D.1. Do you consider that any of the following national rules and framework conditions will still create obstacles to renewable energy production after 2020? (optional)  
- Grid connection rules  
- Cost-sharing rules  
- Balancing rules  
- Curtailment regime  
- None of the above

D.1.1. Please specify which obstacles and the nature and degree of them for each (optional) (maximum 1500 characters; count: 0)

The integration of external costs such as those for gas and electricity infrastructures and new electricity generation, into the overall energy cost would remove many of the obstacles and contribute to create a level-playing field.

D.2. Which renewables-specific grid related rules do you consider necessary and proportionate in a post-2020 perspective? (optional)
Obligation for network operator to develop network
Priority or guaranteed access
Priority dispatch and obligation on TSO to counteract curtailment
None of the above
Other (please specify)

D.2.1. Please explain why (optional) (maximum 1500 characters; count: 0)

Priority or guaranteed access and priority dispatch are sufficient renewables-specific grid related rules if a better management and balance of flexible and variable renewable energy sources will be undertaken.

D.3. With regard to system integration of wind and solar power, what measures do you consider most important to increase the flexibility reserve of the system: (optional)

- Increase flexible back-up capacity (capacity payments ...)
- Increase availability of demand response (smart grids ...)
- Accelerate infrastructure development and interconnection
- Market-based measures: better use of interconnectors (implicit auctions), trading closer to real time
- Increased availability of storage
- Enable renewable generators to offer balancing services to TSOs

TEXT “BOX Other (please specify):

None of the above as the least costly option is to increase the share of flexible renewable sources. Providing renewable base load, flexible renewable energy sources do not have external costs associated with traditional fossil fuels such as storage, grid and supply infrastructures or waste management (CO2, nuclear).

In this regard, geothermal is a renewable electricity source providing flexible and renewable baseload that can operate around the clock, anywhere in Europe, with the best load factor of all energy...
technologies (more than 80%). Geothermal can therefore ensure system stability while reducing grid management costs.

E. MARKET INTEGRATION

Current national support schemes expose renewable energies to market signals to various degrees. In many cases, these support schemes nevertheless result in parallel “systems” for conventional and for renewable generation which are largely unresponsive to each other. The following questions ask in which way this could be addressed in a post-2020 perspective where renewables will represent a significant share of the market.

E.1. In which of the following ways could renewable energy be made responsive to market signals? (optional)

- Price risk - producers of renewable energy should be obliged to sell their production on the market and aid be granted exclusively as a) premiums or b) investment aid
- Price risk - producers of renewable energy should operate without any aid
- Producers of renewable energy should bear greater responsibility for system costs
- Balancing risk - producers of renewable energy should bear balancing responsibility towards TSOs (if so, please specify how: responsibility on individual operator or centrally organised, same balancing rules for all operators or specific rules for variable generation?)

- Producers of renewable energy should continue to be treated separately (no exposure to conventional market)

Geothermal, being renewable baseload, is a flexible renewable energy source running around the clock, and available anywhere in Europe. Geothermal is providing electricity to the grid according to the demand. Hence, it should be rewarded for its features.

E.2. How can it be ensured that market arrangements reward flexibility? (optional)

- Dedicated arrangements to reward availability of generation capacity
- Favourable regulatory treatment of storage operators

- Develop demand response to market signals (please specify, e.g. smart grids, smart meters, demand aggregation, interruptible demand)

- Current market arrangements are sufficient to reward flexibility

Geothermal, having the best capacity factor with more than 80% availability, should be rewarded for its flexibility and for the benefits it provides to the overall grid management system. Only genuine flexible renewables should be rewarded in that sense. Rewarding fossil fuels flexibility would offset other measures.
E.3. In how far do you think today's market design needs to be adapted to provide an appropriate framework for renewables (optional)

- The current wholesale market model based on short-run marginal cost pricing is appropriate
- The current wholesale market model based on short-run marginal cost pricing would have to be supplemented by instruments incentivising investment in generation capacities with a high capex/opex ratio (please specify which)
- Wholesale markets would have to move to reflecting full costs
- Electricity markets should evolve into energy services markets, earning revenues from more than just electricity

EGEC believes that the price of electricity has to reflect the full cost of electricity generation (including externalities) in order to have a transparent internal market. Billing should be as transparent as possible as to allow customers to be aware of all costs associated with power generation from renewables but also from fossil fuels and nuclear.

F. RENEWABLES IN HEATING AND COOLING
The challenges for renewable energy in the heating and cooling market are sometimes considered to be different in that its use is in many cases already cost-competitive but impeded by other barriers. Many of the barriers should be addressed when the Directive is implemented.

F.1. What do you consider to be the main barriers against a stronger uptake of renewable energy in the heating and cooling market beyond 2020? (optional)

- Costs/lack of financial support
- Building regulations etc.
- Lack of awareness
- Lack of suitable information
- Lack of public support
- Lack of capacity (installers, other)
- Other (please specify)

- Lack of fair competition with conventional sources of energy in heating and cooling. The internalization of external costs is of utmost importance in this regard.

F.2. What pathways do you consider to be the most promising for further increasing the share of renewable energy in heating and cooling beyond 2020? (optional)

- Biomass
- Geothermal
Meeting Europe’s 20% energy saving target is an extraordinary opportunity to re-launch sustainable growth in a time of economic crisis. In the long-term period, more and more energy efficiency improvements are needed. To this end, geothermal and other renewable heating and cooling technologies will be contributing to dramatic reductions in primary energy consumption.

Renewable heating technologies provide market ready, efficient and completely carbon-free energy. Electrification of the heating sector should not be encouraged when other truly renewable heat technologies are available and deliver better and more efficient solutions, notably deep and shallow geothermal.

Thermal needs should be primarily supplied by thermal sources and decentralised energy demand should also primarily supplied by decentralized energy supply. As a result lower costs and better efficiency will be achieved. Therefore, reducing the electrification of heating and cooling will relieve the stress on the power system and shave peak loads.

I. REGIONAL AND INTERNATIONAL DIMENSIONS

The cooperation mechanisms of the current Directive offer a framework for cooperation between Member States and with third countries. A number of initiatives are currently under consideration for putting regional coordination in practice, both within the EU as well as with neighbouring regions.

I.1. Do you consider current rules for cooperation between Member States sufficient to fulfil their purpose, i.e. realisation of cost-efficient renewable potential in the EU? (optional)

- Yes
- ☐ No (please specify how they should be amended or which elements added)
- ☐ N/A

Geothermal can be developed anywhere in the EU. For its development two additional cooperation mechanisms are needed:

- The cooperation mechanism should include a mechanism to develop a European geothermal risk insurance scheme.

- More cooperation in increasing awareness about geothermal and its potential as well as for R&D should be promoted.
I.2. Do you think the EU should further facilitate cooperation with third countries when it comes to the development of the potential for renewable energy? (optional)

- No, the EU should first focus on developing its own renewable potential
- Yes, cooperation with third countries should be further promoted (please specify how and with whom, i.e. only neighbouring countries or more widely)
- N/A

I.3. Should investments in electricity networks in some Member States (i.e. Spain, Greece, Italy) be prioritized for this purpose? (optional)

- Yes (explain in which way and to which degree)
- No (explain why)
- N/A

Investments in electricity network in some member states in order to facilitate imports of electricity from third countries should not be encouraged and eventually the costs should be taken into account. What should be prioritised is the development of local flexible renewable energy sources, notably geothermal which is a baseload renewable energy source that can operate around the clock, anywhere in Europe, therefore ensuring system stability.

I.4. Which measures do you consider appropriate and necessary in order to foster cooperation with third countries in this area? (optional)

- Bilateral agreements between Member States and third countries
- Agreements between the EU and third countries
- Other measures (please specify)
- N/A

NO TEXTBOX

I.5. In its Communication on security of supply and energy cooperation – “The EU Energy Policy: Engaging with Partners beyond our Borders”, the European Commission proposes to promote cooperation on renewable energy projects with the Southern Mediterranean countries and to gradually build a renewed EU-Mediterranean energy partnership focus on electricity and renewable energy. How do you consider this should relate with the EU internal renewables policy? What should be the priorities? (optional) (maximum 1500 characters; count: 0)

It can only be an add-on and it has to focus on RES development for national and regional deployment in third countries. Such a partnership could make sense for developing renewables in that area for use in that area, not for export to the EU.

When the EU undertakes joint projects and cooperation with a third country regarding the generation of electricity or heat from renewable sources, the EU should facilitate the concerned country or countries’ domestic use of part of the production from the installations covered by the joint project. Furthermore, the third countries involved in joint projects should be encouraged by the
EU to develop a renewable energy policy including ambitious targets.

I.6. The possibility to explore regional cooperation and a coordinated, more strategic approach to grid connection for the rapidly growing volume of offshore wind generation in the North Sea is currently being explored in the framework of the North Sea Countries Offshore Grid Initiative (NSCOGI). Do you think such cooperation should be further fostered? What benefits do you think could arise from it? Do you consider that this experience could be generalised and applied elsewhere? (optional) (maximum 1500 characters; count: 0)

No, the EU should focus its efforts in developing RES technologies that do not need large infrastructure costs.

J. TECHNOLOGY DEVELOPMENT

The SET plan presents the strategic framework to accelerate the development and deployment of cost-effective low carbon technologies in the perspective until 2020. For a limited number of technologies industrial initiatives were set up according to two criteria, their large-scale availability by 2020 and the willingness of industry to engage in public private partnerships.

J.1. For a first set of renewable technologies, namely wind, solar, bio-energy, the SET Plan aims at a cost-competitive market roll out of renewable energy by 2020. It also aims at enabling integration of renewable energy into the electricity grid and smart cities and communities. In your view, what would be the remaining key challenges of these technologies to be addressed by research and innovation in view of the 2050 objectives? (optional)

- Technology performance and cost-competitiveness
- System integration
- Industrial manufacturing and supply chain
- Other (please specify)

Although geothermal is included in the SET plan, it is not fully integrated and a proper industry initiative for geothermal must be developed for

- Deploying EGS all over Europe
- Developing smart cities initiative towards a 100% share of renewables in heating and cooling, by also promoting smart electricity and thermal grids

J.2. Which additional measures and/or instruments should be developed to address these technologies and their remaining challenges and to ensure that the EU innovation fabric is geared to supporting the significant deployment up to 2050? (optional) (maximum 1500 characters; count: 0)

The challenge is to have a renewable energy mix in the future combining both variable and flexible RES. The objective should be to establish instruments and to adopt measures going into this direction by supporting more R&D for geothermal.
J.3. In your point of view, which technologies other than those covered by the current industrial initiatives should be given priority in the post-2020 perspective? Please justify with reference to the criteria mentioned above, i.e. large-scale availability and willingness of industry to engage in public private partnerships? (optional) (maximum 1500 characters; count: 0)

Geothermal

- Geothermal electricity, notably for the development of EGS (Geothermal Enhanced Systems). This technology is not only available in all EU member states, but it also produces electricity 24 hours a day. The first research projects have to be replicated. Moreover, as it is a capital intensive technology PPPs represent a viable option.

- Geothermal heating and cooling, in order to promote smart cities, including smart thermal grids

J.4. How successful do you consider the existing measures have been and which have been the main drawbacks? (optional)

- Very successful, no drawbacks
- Successful but some drawbacks (please specify which)
- Not successful
- N/A

Successful results:

- EERA - European Energy Research Alliance - Joint Programme on geothermal energy is rather successful as it is mobilizing large resources for R&D in geothermal. it now starts also to cooperate with the industry, which is a great signal

- The European Technology Platform on renewable heating and cooling (RHC TP) which brings together stakeholders from the biomass, geothermal and solar thermal sector - including the related industries - to define a common strategy for the use of renewable energy technologies for heating and cooling and achieving a 100% share in 2050. The work of the platform is successful, but needs implementation as well Industry Initiatives.

J.5. Do you consider that assistance in technology development should be linked to a certain result to be achieved by a certain deadline? (optional) (maximum 1500 characters; count: 0)

EGEC believes that this is a pre-requisite in order to stimulate innovation. This is the reason why energy technologies not fulfilling these two criteria (i.e. tangible results such as new tools and technologies and within consistent timeframes) should not be prioritised.