Invitation to a

JOINT CALL FOR PROPOSALS

Topic:

Small-scale heat and power production from solid biomass

7th Joint Call for Research and Development Proposals of the ERA-NET Bioenergy

Deadline for submission of pre-proposals: 13.05.2013

Summary

The ERA-NET Bioenergy wishes to fund collaborative projects for the small-scale production of bioenergy by way of thermochemical conversion. Ca. 3.6M Euros are available for this 7th call from funding bodies in Germany, Poland, Sweden and the UK. Projects must have at least 2 partners and aim to generate heat and/or power from sustainable biomass at small scale. Projects must be scientifically challenging or innovative to warrant public investment.

Bioenergy will be significant provider of renewable energy in the future. However, biomass is not uniform and is challenging to transport over long distances. Therefore, there is an opportunity for smaller or scaled-down systems for feedstock processing and bioenergy generation.
The ERA-NET Bioenergy is a network of national Ministries and funding organisations which fund national bioenergy projects. The ERA-NET was funded by the European Commission under FP6 between October 2004 and December 2010 but is now self-funded through a membership model. Further ministries or R&D funding agencies from other European countries are always welcome to join the network or individual calls.

ERA-NET Bioenergy has so far funded six calls on small-scale combustion, on cleaning of product gas from biomass gasification, on short rotation coppice, on clean biomass combustion, on sustainable forest management and optimised use of ligno-cellulosic resources (together with WoodWisdom-Net, an ERA-Net on wood material science), and on biogas and energy crops.
The purpose of the ERA-NET is to provide additional value compared to national funding by supporting transnational research and knowledge exchange, and to thus increase the use of biomass for energy.
The approach of ERA-NET Bioenergy differs from e.g. the Framework Programmes in that our focus is on medium-sized consortia (typically, two to eight partners) with excellent individual merits as well as complementarity.

Key call dates

Call opens	**1 March 2013**
Deadline for submitting pre-proposals	**13 May 2013, 1pm CET**
Letters to applicants/invitation to phase 2	**11 June 2013**
Deadline for submitting full proposals	**20 August 2013, 1pm CET**
Expected project start	**January/February 2014**

This call is published on the ERA-NET Bioenergy web page and on the web pages of the participating national programmes.
See: www.eranetbioenergy.net

1. Background

The European Commission supports the use of biomass for energy to increase the use of renewable energy and to avoid an increase in atmospheric CO_2 concentrations. The European Union and its Member States decided to set a target of 20% CO_2 reduction and 20% renewable energy for the year 2020. Bio-based energy sources are the greatest contributor to the EU's renewable energy strategy, since they represented 68.2% of the EU 27's primary renewable energy consumption in 2010. By enhancing co-operation and co-ordination of R&D efforts on a European level, ERA-NET Bioenergy aims to realise the potential of renewable energy production from biomass and contribute to the 2020 targets.

Bioenergy can be a source of cleaner, more secure and sustainable energy. However, the variability of feedstocks creates challenges for processing and conversion technologies. In addition, it can be expensive to transport biomass over long distances or store it for long periods of time. Therefore, localised, small-scale systems may be a solution. Emissions targets are demanding e.g. for fine particulate matter (PM2.5), nitrogen oxides and organic compounds, and they are harder to achieve in a cost-efficient way at small scale.

Many countries will not be able to satisfy their demand for food, feed, fibres and fuels from domestic biomass resources alone. Although biomass imports will doubtless increase, this aspect also raises further difficult questions with regard to sustainability, public acceptance and political considerations. It is therefore vital that biomass be converted to energy in as efficient a way as possible. Research and development are required to optimise the use of conventional feedstocks, test novel or unexploited ones, and improve renewable energy production through innovative combination of different technologies, e.g. bioenergy and solar energy.

Most of the current R&D activities on heat and power from biomass are funded by national or regional programmes, while international and European co-operation and co-ordination of research activities on bioenergy are limited. ERA-NET Bioenergy aims to fill this gap and enable transnational exchange of knowledge and experiences, but using the national programmes and rules known to applicants. In contrast to the European Framework Programmes, applicant consortia are typically medium-sized.

On an international level, within the IEA Bioenergy implementing agreement[1], three tasks focus on topics relevant for this call: i) Task 32 "Biomass Combustion and Co-firing", which refers to both dedicated combustion and co-firing of biomass for the production of usable energy and includes market introduction and optimisation of biomass combustion technologies; ii) Task 33 "Thermal Gasification of Biomass", which deals with gas clean-up and processing to either enhance the quality of the fuel gas and/or adjust the composition of the gas for subsequent conversion to other fuel forms, chemicals, hydrogen, and other products and iii) Task 34 "Pyrolysis of biomass", which aims at facilitating commercialisation of biomass fast pyrolysis to maximise liquid product yield and quality and production of renewable fuel oil and transportation fuels. IEA Bioenergy aims at improving cooperation and information exchange between countries that have national programmes in bioenergy research, development and deployment. IEA Bioenergy
does not, however, carry out any joint R&D programming and funding.

The ERA-NET Bioenergy's 4th joint call, in 2009, focussed on the topic of clean biomass combustion[2]. Five projects were funded, and in September 2012, consortia were able to present and discuss their results, as well as future research needs, at a final seminar organised by ERA-NET Bioenergy in Vienna[3]. The presentations can be found under www.eranetbioenergy-net, and the feedback from the seminar was used to develop the current call.

[1] See www.ieabioenergy.com
[2] See www.eranetbioenergy.net
[3] All the presentations can be found at the events section of the ERA-NET Bioenergy website (http://www.eranetbioenergy.net/)

2. Aim of the call

The aim of the call is to fund innovative, collaborative pan-European, bioenergy projects on small-scale heat and/or power. Ca. 3.6 M € are available for this call. Projects must have at least 2 partners from different partners with the project's benefits shared between all parties.

This 7th call provides funding for new collaboration opportunities for companies, research and technology organisations and academic researchers in the abovementioned countries. Partners from other countries are welcome to join consortia on their own resources. Project outputs will be beneficial to all countries involved. Projects should contribute to increasing the economic competitiveness of small-scale, thermo-chemical biomass conversion into heat and/or power. This may be through novel processing or conversion technologies, improving existing systems significantly, scaling down existing systems, working with new feedstocks, increasing the flexibility of existing systems to handle multiple or "difficult" feedstocks, technologies to lower air emissions or systems that combine bioenergy with other renewable energy sources.

3. Joint call topic

Projects whose major focus is combustion of liquid and gaseous biofuels are outside the scope of the call. The call is restricted to Research, Development and Demonstration (R&D&D) projects applying to the thermochemical conversion of solid biofuels and mixtures of solid biofuels to produce heat and power. Relevant to this call are forestry and agricultural solid biofuels, as well as residues. All feedstocks should be sustainable.

Focal points:

- Small-scale systems for thermochemical biomass conversion to heat and power: Demonstration and optimisation of alternative, unexploited biofuels or "difficult" feedstocks in the conversion process (e.g. practical experiences with set-up of operations, maintenance, operation optimisation, fuel management, and minimising the operational problems arising from the use of agricultural fuels at small scale).
- Small-scale solid biomass conversion: development and implementation of innovative CHP methods for solid biomass conversion to allow for a regional energy supply (optimisation of economics and operational costs of small-scale heat or heat CHP production
- Emission reduction technologies: minimising particle and other hazardous emissions from small-scale biomass conversion and improving the efficiency and economy. of such plants, existing as well as new ones.
- Systems combining small-scale bioenergy with other renewable technologies, e.g. solar thermal, photovoltaic, hydrogen.

4. Instructions for applicants

General

- Proposals are expected to address one or more of the abovementioned points under chapter 3, “Joint call topic”.
- Please note that individual national funding organisations may be limited in the kind of project they could support.
- These restrictions, as well as other important national regulations, can be found in Annex I at the end of this document.
- In case of any further questions, please contact your national funding organisation prior to submitting a proposal.

Consortium

Proposals are invited from transnational consortia involving large companies, SMEs, research organisations and/or stakeholder associations depending on national funding conditions.

Proposals must include partners from **at least two of the countries** involved in the call. The partners should cooperate and the results of the project should be dependent on the work of the partners. Project outputs are expected to provide benefits to all partner countries.

As projects are expected to be market-oriented, **it is strongly recommended that one or more industrial partners** participate in the consortium. If industry participation is not feasible due to the scope/outlay of the envisaged work, the reasons for this decision should be explained in the proposal. Note that detailed exploitation and dissemination plans are an important feature of every proposal.

Partners from countries which are not members of ERA-NET Bioenergy are also encouraged to join a consortium (as additional members, the minimum number of two partners from ERA-NET Bioenergy countries remains). These so-called “third country” partners must finance their activities from other sources, as the ERA-Net Bioenergy members will not provide it, and projects must ensure that the exploitation of results focuses on the ERA-NET Bioenergy partner countries.

The proposal must address the added value derived from international cooperation, in comparison to national projects. This should be evident in the layout and execution of the work packages.
The number of partners per consortium is not limited, but the manageability of the consortium must be demonstrated. Consortia also need to be balanced between countries both in terms of number of partners and distribution of budget, such that all project partners contribute to and benefit from an equitable and balanced cooperation.

The project partners are required to sign a consortium agreement in order to agree on Intellectual Property Rights (IPR) and other relevant issues dealing with responsibilities within the project and exploitation of results. **The consortium agreement must be signed before the first payment can be made.**

The ERA-NET Bioenergy does not provide direct information on potential partners in their countries.

Funding arrangements

Research will be **funded from national sources and subject to national funding rules**. Each participating funding agency has made separate arrangements for funding the national participants. The amount of public funding available for individual projects depends on the relevant national rules. Additional co-financing from stakeholders is expected following national and European rules for R&D funding. The total funding budget is limited. For details please contact your national funding agency.

Project duration

The maximum project duration will be three (3) years. Projects are expected to start between **January and February 2014**, and the end date should be the same for all partners in a consortium.

Deadline for submission

Pre-proposals must be received via e-mail by the central **Call Secretariat (Mr. Matté Brijder, matte.brijder@agentschapnl.nl)** by **May 13 2013, 13:00 CET** at the latest. It is the responsibility of each applicant to ensure their documents are submitted on time.

Structure of submission

Pre-proposal:
The pre-proposal consists of one common document following the structure of the template available from March 1 2013 on www.eranetbioenergy.net.
A non-confidential, abstract is required for publication.

Full proposal:

- On June 11 2013, only consortia whose pre-proposals pass the first evaluation stage will be invited to submit full proposals.
- These full proposals should follow the structure of the template which will be available on the ERA-NET Bioenergy website from June 11.
- The deadline for submitting full proposals will be **20th August 2013**, 13:00 CET.
- Some national funding bodies may also require specific national documents (application forms or similar) from "their" applicants at this stage. Such national documents are NOT submitted at the central website, but directly to the relevant ministry or agency. Please consult the relevant National Annexes at the end of this document for further details.
- All proposals should be written using the Times New Roman, font size 11.

Proposal evaluation

Proposals will be evaluated against the following criteria:

- Contribution to the goals of the call
- Technical and scientific quality; innovation
- Quality of the consortium
- Project Management
- Outputs and exploitation

Feedback will be given to **pre-proposals** which will indicate whether applicants can proceed to the full proposal stage either unchanged, with suggested modifications, cannot unless modifications are made or cannot proceed.

The full criteria for **full proposals** can be found under Annex II. Evaluation of full proposals will be by an international evaluation jury, selected by the funding organisations involved in the call. The international evaluation jury will provide recommendations for funding. The final decisions will be taken by the ERA-NET Bioenergy partners.

The evaluation of full proposals will take place between end of August and October 2013 and the funding decisions will be communicated in late 2013. Projects are expected to start between January and February 2014.

Beyond these instructions above, your participating national funding agency's guidelines should be followed.

Project monitoring and expected deliverables

In addition to the standard requirements of your funding agency, ERA-NET Bioenergy requires the following:

1. Participation in and presentation at two joint ERA-NET status seminars (mid-term and final seminar).
2. Depending on the project duration, *at least* one common interim report following the template which will be provided in due time. This interim report will be available to the funding organisations involved, but will not be made public. Be aware that national regulations will apply to interim reports. Care will be taken by all funding bodies to minimise the bureaucratic workload for the consortia.
3. A common publishable and public Final Report (written in English), describing the main activities and outcomes of the work including an exploitation plan stating how the results of the project will be implemented. Confidential results will be presented in a separate confidential report. National guidelines have to be followed as well. Detailed requirements for this report will be distributed to successful applicants once the projects have started.
4. An abstract of the main results of the project, to be published in a "joint call brochure" after the end of the projects.

Participating countries / National contact points

Germany
Fachagentur Nachwachsende Rohstoffe (FNR)
Contact persons: see National Annex (Annex I)
www.fnr.de

Poland
Polish National Centre for Research Development
Karolina
+48 515 061 554
karolina.janczykowska@ncbr.gov.pl
http://www.ncbir.gov.pl

Sweden
Swedish energy Agency
Åsa Karlsson
+46 16 544 2342
asa.karlsson@swedishenergyagency.se
www.swedishenergyagency.se

United Kingdom
Technology Strategy Board
List of contacts: see National Annex (Annex I)

Annex I: Specific National Rules

Germany

Funding quota of German participants can be up to 100 % for universities or research organisations. In the case of companies, funding quota will be decided on a case-by-case basis depending on the size of the company, type of research/development, risk associated with the research activities, commercial perspective of exploitation, typically up to a range of max. 50%. In this case, overhead costs can be considered for companies.
In case of small and medium enterprises, an additional bonus of 10-20 % funding quota can be awarded.
There is no obligation regarding the number of companies to be involved from Germany, but company participation is recommended for dissemination and exploitation of results.
The relevant national R&D programme for German project partners is the BMELV's "Nachwachsende Rohstoffe" ("Renewable Resources") managed by FNR.
There is no need for additional national application forms without request by the funding organisations. The central transnational application is sufficient. Each member of the consortium must clearly present their goals and work within the project, global and local (country-specific), the financial and time tables and the points of actual collaboration with the international partners.
Only the German project partners of positively evaluated projects will, at a later stage, be invited by FNR to submit national application forms within one month after notification.
The usual FNR funding rules and forms will apply: AZA or AZK using the electronic proposal assistant "easy" (see http://www.kp.dlr.de/profi/easy/formular.html for details).

The total budget available for the call in Germany is limited to 1 Mio €.

Contact person for *topic-specific questions* during the application phase:
Dr.-Ing. Andrej Stanev, a.stanev@fnr.de, +49-3843-6930-134
For general questions (ERA-Net regulations, international collaboration):
Karen Görner, k.goerner@fnr.de, +49-3843-6930-162

Poland

Funding commitment: 800 000€

Contact person

Karolina Janczykowska,
Section of Management of Applied Research Programmes INFOTECH,
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+48 515 061 554
E-mail: karolina.janczykowska@ncbr.gov.pl

At the "Invitation for Pre-Proposals Stage" there is no need for additional national application forms. The transnational application to the central call office is sufficient. Only the Polish project partners of positively evaluated projects will then, in a second stage, be invited to submit national application forms.

Funding Rules

Funding quota of Polish participants can be up to 100% for universities or research organisations. In the case of entrepreneurs, funding quota will be decided on a case-by-case basis depending on the size of the company, type of research/development, risk associated with the research activities and commercial perspective of exploitation. Organisations must be registered in Poland.

Type of activity	Funding quota			
	Entrepreneurs			Universities and research organisations
	Large	Medium	Small and micro	
Industrial Research	Up to 65%	Up to 75%	Up to 80%	Up to100%
Experimental development	Up to 40%	Up to 50%	Up to 60%	Up to100%

The eligible costs shall be the following:

1. **personnel costs** (researchers, technicians and other supporting staff to the extent employed on the research project);
2. **costs of instruments and equipment** to the extent and for the period used for the research project; if such instruments and equipment are not used for their full life for the research project, only the depreciation costs corresponding to the life of the research project, as calculated on the basis of good accounting practice, shall be considered eligible;
3. **costs for buildings and land**, to the extent and for the duration used for the research project; with regard to buildings, only the depreciation costs corresponding to the life of the research project, as calculated on the basis of good accounting practice shall be

considered eligible; for land, costs of commercial transfer or actually incurred capital costs shall be eligible;

4. **cost of contractual research, technical knowledge and patents** bought or licensed from outside sources at market prices, where the transaction has been carried out at arm's length and there is no element of collusion involved, as well as costs of consultancy and equivalent services used exclusively for the research activity; this cost type cannot account for more than **70%** of all eligible costs of a project; the subcontracting can be obtained from consortium partner only in justified case, this need will be verified by a national experts panel;
5. **other operating costs**, including costs of materials, supplies and similar products incurred directly as a result of the research activity;
6. **additional overheads** incurred indirectly as a result of the research project; that costs cannot account for more than **8%** for enterprises, **15%** for private universities and research institutes and **20%** for public universities and institutes of the Polish Academy of Sciences of all eligible project costs; That costs (6) are counted as a multiplication by percentage given above (called x%) and the rest of direct costs. It means 6=(1+2+3+4+5)*x%.

Please check the description of the national eligibility criteria for funding, eligible costs, rules for proposal preparation etc. at: http://www.ncbir.pl

Sweden

Decisions on funding research, development and innovation in the energy area are taken according to the ordinance SFS 2008:761 in the Swedish Code of Statues. Funding quota of Swedish participants can be up to 100%, 50% and 25% of eligible costs for each participant in a project defined as basic research, applied research and development, respectively. The quota can be increased in case of e.g. small and medium enterprises, see the ordinance for details. The decision cannot be appealed.

The budget allocated for Swedish participation for this call is 1.2 M €.

The strategy for the Swedish Energy Agency's efforts on bioenergy feedstock R&D are described in the report *FOKUS III – Bränslebaserade energisystem* (ER 2010:05)[4].

The central transnational application form is sufficient for pre-proposals. For projects invited to send in full proposals, preferably the online application form E-kanalen[5] or a Swedish Energy Agency application form is necessary. The common proposal for the consortium should be appended.

Granted projects have to meet conditions such as submitting interim and end reports as well as accounts. In addition, the projects should contribute to evaluations, conferences and other common programme activities.

Sweden has a constitutionally founded right of public access to official records. All documents sent to, sent from or drawn up at Swedish Energy Agency are therefore official. In this call, the documents concerned are e.g. applications, minutes from expert evaluation meeting, project contracts. Secrecy can only be claimed when legally supported. If a project leader wishes to keep an application confidential due to for example IPR reasons, Swedish Energy Agency should be informed. In case e.g. the application is asked for, Swedish Energy Agency decides whether (parts of) the document can be marked as confidential. The decision can be appealed to the Administrative Court of Appeal and subsequently to the Supreme Administrative Court.

4 http://webbshop.cm.se/System/DownloadResource.ashx?p=Energimyndigheten&rl=default:/Resources/Permanent/Static/f7d24384d1bb4c108a6a6764ad7ddc01/ER2010_05W.pdf

5 http://energimyndigheten.se/E-Tjanster/E-kanalen/

United Kingdom

INDUSTRIAL PARTICIPANTS

Partner: Technology Strategy Board

- Companies and Research and Technology Organisations (RTOs) are eligible for the following funding rates:
  - Large Companies – 50% of eligible costs
  - SME - 60% of eligible costs
  - RTO – 100% of eligible costs
- Companies with fewer than 5 Full Time staff cannot lead a project, unless agreed prior to application with the Technology Strategy Board.
- At the time of application companies must have been registered at Companies House and trading for at least 12 months and be VAT registered.
- UK participants must be separate legal and non-linked entities.
- UK grant claims must be for project costs incurred in the UK, including subcontracting, which is capped at 20%.
- In the UK the maximum amount of grant funding is €300,000 per UK participant in any single project.

The UK budget earmarked for this call is 0.5 M£, ca. 0.6 M €.

Contact Points

Technical Scope
Dr Merlin Goldman (TSB)
Funding organisation: Technology Strategy Board - TSB
Postal address: North Star House, North Star Avenue, Swindon, Wiltshire, SN2 1UH, UK
Phone: +44 1793 442738; e-mail: merlin.goldman@tsb.gov.uk

Funding Eligibility
Mr Graham Mobbs (TSB)
Funding organisation: Technology Strategy Board - TSB
Postal address: North Star House, North Star Avenue, Swindon, Wiltshire, SN2 1UH, UK
Phone: +44 1793 442763; e-mail: graham.mobbs@tsb.gov.uk

Annex II: Evaluation criteria

Evaluation criteria for full proposals

Indicator 1	Contribution to the Call	Unsatis-factory	Poor	Average	Good	Very good
1	**Contribution to the goals of the call** How well does the proposal align with the call topic?	0	6	12	20	25
Maximum						**25**

Indicator 2	Technical/scientific quality	Unsatis-factory	Poor	Average	Good	Very good
1	**Novelty** Does the proposed project produce a step forward in knowledge and technology?	0	4	7	12	15
2	**Quality of the proposed R&D** Are the issues to be addressed significant and relevant within this field? Will the proposal as written be able to address these issues? Are worthwhile challenges identified in the proposal?	0	6	12	20	25
3	**Quality of the approach - methodology** Clarity, adequacy and consistency of the approach. Is there enough technical detail in the methodology? Is the approach clear, adequate to the problem and consistent?	0	5	9	17	20
Maximum						**60**

Indicator 3	Qualification of Consortium	Unsatis-factory	Poor	Average	Good	Very good
1	**Competence concerning the topics addressed** Does the consortium have the necessary competence and experience to achieve the results proposed?	0	4	7	12	15
2	**Co-operation and complementarity of partners** Are the partners clearly complementary in their roles and do they fit together? Is the balance between the partners appropriate? Is there added value in the co-operation including why specifically the international co-operation improves the quality of the results? Is there a true co-operation of all partners (e.g. not simply separate work packages)? Will external	0	4	7	12	15

	stakeholders be engaged?					
3	**Availability of technical and human resources** Are appropriate technical and human resources available within the consortium or if not, have they been requested within the proposal?	0	2	4	8	10
Maximum						**40**

Indicator 4	**Project management**	**Unsatis-factory**	**Poor**	**Average**	**Good**	**Very good**
1	Quality of project management Are suitable plans and structures in place to ensure the project will operate effectively over its run time? Is there sufficient detail in the project plan (milestones, work packages,…)? Are arrangements in place to ensure effective & efficient communication between the partners?	0	5	9	17	20
Maximum						**20**

Indicator 5	**Outputs and exploitation**	**Unsatis-factory**	**Poor**	**Average**	**Good**	**Very good**
1	**Potential outputs and expected results** Are any cost reductions and efficiency improvements likely to result from the proposed work?	0	8	14	24	30
2	**Plans for implementation and exploitation** Are realistic and approriate plans in place for effective implementation and subsequent exploitation of the outputs?	0	6	12	20	25
Maximum						**55**