ERA-NET ÆRTOs

Associated European Research and Technology Organisations

Project Number: 219340

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0 Publishable Summary

ÆRTOs - Associated European Research and Technology Organizations - an FP7 ERA-NET

Background

ERA-NET projects aim to create synergies among national R&D programmes. They target programme owners (ministries or funding agencies). ÆRTOs may appear a little different in that the key actors are Research and Technology Organizations (RTOs). However, the RTOs participating in ÆRTOs operate under a public mandate and hence are in essence public programmes.

The ÆRTOs participants are seven major research organizations (VTT, TNO, SINTEF, Fraunhofer, CEA, SP, Tecnalia) from six Member States (FI, NL, DE, FR, SE, ES) and one Associated State (NO). EARTO, the European Association of Research and Technology Organizations, plays a role as subcontractor, ensuring that the participating RTOs and their programme owners take account of RTO interests and structures in other Member States while actively promoting the results of the project to the wider RTO community.

Objectives

ÆRTOs' rationale is to foster greater RTO cooperation within Europe. The aim is to achieve important efficiency gains by exploiting synergies and avoiding duplication of effort, thereby further strengthening European innovation potential.

ÆRTOs takes the challenge to begin a new, integrated pan-European RTO infrastructure aimed at developing strategies and governance mechanisms to implement significant joint programmes using their own public funding. One main expected outcome of ÆRTOs has, therefore, been the development of funding mechanisms enabling researchers from the project partners to apply internally for funds and to perform joint research activities - a unique procedure in Europe.

Results

First of all it needs to be stated that the results achieved in the project went far-beyond the objectives originally agreed upon in the project proposal. ÆRTOs has led to a number of strategic initiatives and cooperation's, such as a pilot programme, horizontal actions in the field of HR and the generation of a green paper and Strategic Research Agendas. A more detailed description is given in the following:

The first meetings, workshops and study visits aimed at understanding the RTOs strategies and operations. They served as a basis to discover synergies and establish a structured collaboration on specific programmes. A project analysis from RTO cooperation in FP6 manifested that there already is a great amount of collaboration. However, this cooperation is largely stimulated through EU project funding and usually ends when the project ends. A comparative study ("inventory list") was drafted that not only helped to better understand each RTO way of working but also to give recommendations for developing joint programmes. It laid the strategic foundations for the deployment of resources for operative project collaboration. A workshop on identification and exchange of good practices served to select out of a spectrum of possibilities the most appropriate ones.

These lead to the first milestone, the **successful implementation of a First Pilot Programme** among the ÆRTOs partners. Setting up a whole pilot programme went far beyond the original project plan which foresaw only a 'quick start pilot project' as first step. The pilot programme started in 2010 with a budget of €2.7Mio, self-financed by ÆRTOs partners. In total, six projects have been launched in the areas of energy-efficient buildings and off-shore wind energy. All projects have now been successfully completed.

ÆRTOs also served as a catalyst to develop strategic RTO cooperation in **Joint Horizontal Actions**. A joint Task Force on Human Resources was set up, including also partners from outside ÆRTOs. Already at their first meeting in January 2009, the idea was born to develop an **International Project Management Scheme** for upcoming, high-potential project managers. An important result was the launch of a first pilot for a Project Management Training Programme in 2011. A second pilot is planned for 2012. These results also go beyond the original project objectives.

Collaboration on project level was successfully continued by the **Identification of Strategic Topics** which have the potential to become a new ÆRTOs programme. Five strategic topics (Bio-based economies, Value from waste, Resilient cities, Service science, and Scarcity of critical materials) were identified for further cooperation. Workshops on each topic were conducted that resulted in the development of Strategic Research Agendas both as separate stand-alone documents and summarized in the form of a Green Paper, a further milestone of the project. The **Green Paper** identifies critical themes for the EU and Member States, in relation to societal grand challenges, Joint Programming Initiative and other Horizon 2020 objectives, and where ÆRTOs member organisations expect to make a significant contribution. The successful cooperation led to the launch of the project 'Value from Waste'. The focus lies on two major emerging issues with respect to future value from waste:
1) Scarce Metals Recovery, separation, and reuse
2) Safe Management of Nanowaste.
The project aims at developing innovative and profitable methods for recycling scarce materials, thus enabling Europe to lead the way in exploiting existing materials. Further, it focuses on analyzing the effect of nanowaste on the environment and on existing methods for extracting recyclable fractions in order to increase the degree of sustainable recycling. The "Value from Waste" project started in 2012 with a budget of €3,5Mio, self-financed by ÆRTOs partners.
The future task of ÆRTOs lies in developing a consolidated **Governance Structure** for the sustainable development of ÆRTOs cooperation. After having identified and analyzed different governance models, the ÆRTOs Board has chosen to continue cooperation of the ÆRTOs partners within the ÆRTOs Community'. The Community will facilitate and govern specific programmes under a Strategic Research Agenda and horizontal actions towards long-term strategic objectives. It will further accompany and monitor currently running projects, such as "Value from Waste".
To sum up, ÆRTOs has taken the challenge of fostering greater RTO cooperation in Europe. A unique procedure in Europe has been implemented with the launch of a pilot programme, enabling researchers from the project partners to apply internally for funds and perform joint research activities. The high interest for cooperation and positive results of the first pilot led to another project, tackling European challenges in the area of waste management. ÆRTOs served also as a catalyst for implementing horizontal activities, such as the Task Force on Human Resources. An accomplishment of this group is the set up of a management training programme as well as a joint HR policy of cross RTO-border mobility.
In this way, ÆRTOs has demonstrated its capacity for joint programming and to achieve important efficiency gains by exploiting synergies and avoiding duplication of effort, thereby further strengthening European innovation potential.

Further information is available from the project coordinator:

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1 Work Progress and achievements during the period

This final report covers the whole duration of project, from 1 April 2008 to 31 March 2012. It gives an overview of the progress and achievements of work from project month 01 to 48 in line with the structure of Annex I of the Grant Agreement. It has to be stated that all objectives have been accomplished. On top of that, the achieved results go even far-beyond the objectives set in the original work plan. In the following, a detailed overview is given on the objectives and results of the different Work Packages (WP):

WP1 "Learning" was dedicated to comparing RTO's activities, profiles and competencies.

WP2 "Programming and experimenting" aimed at identifying areas of joint interests for a pilot programme and expected synergies. This was realized by setting up a prioritized list of cooperation opportunities and organizing different thematic workshops, bringing together the respective experts from each participating organisation in the workshops. Small adaptations have been made to the initial project plan; the updated project plan is displayed in the graphic below. The main adaptation was to move the launch of a quick start pilot project from WP2 to WP3. The rationale behind was to start with a real pilot programme rather than to launch a small quick start project.

WP3 "Planning and implementing" focused on setting up a detailed action plan for a pilot programme and start testing the concept by launching the first pilot programme.

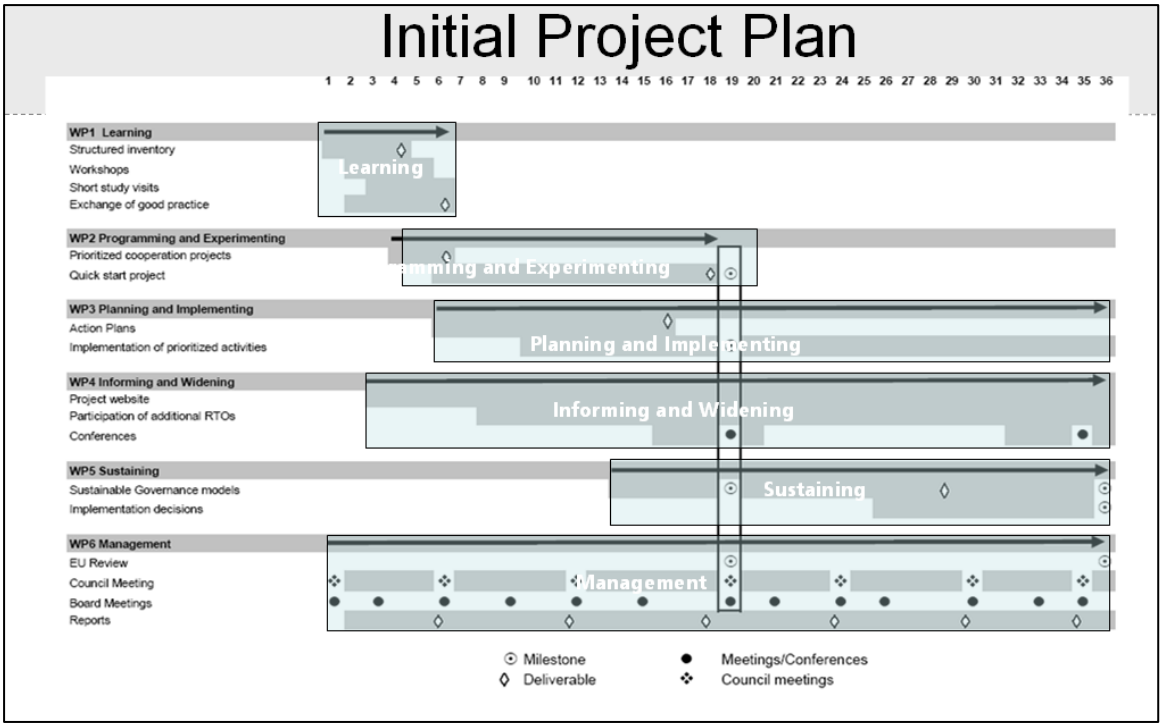
The objective of **WP4 "Informing and widening"** was the dissemination and communication of the work achieved by ÆRTOs by different means and the project extension to other RTOs.

WP5 "Sustaining" was dedicated to identifying and developing appropriate governance mechanisms and structures for long-term cooperation between RTOs.

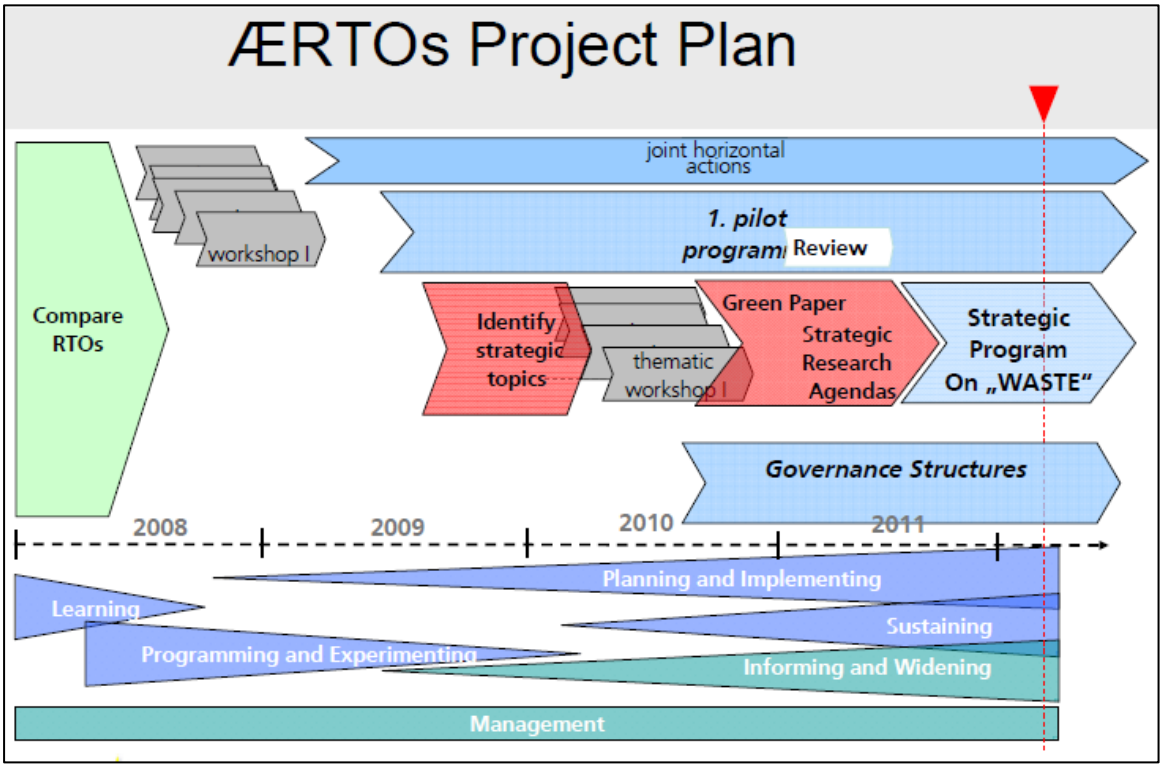
WP6 "Management" was dedicated to Project Management; an overview of the management activities is given in this report.

ÆRTOs' method of work is characterized by a strong interaction between the different work packages.

This graphic shows the **initial ÆRTOs work packages and schedule** (April 2008).



This graphic shows the updated ÆRTOs project plan (March 2012). The red line indicates the project end (March 2012).



2 WP1 "Learning"

WP1 has been finalized and all deliverables have been submitted to the European Commission.

The objective of WP 1 was the production of a systematic, structured comparison of the different research and related technology activities undertaken by participating RTOs. This "inventory" served as a basis for selecting areas of activity for future collaboration. Further objectives were to exchange information about operational practices and to share good practice related to the different research and technology activities of the participating RTOs. In doing so, the characteristics and interests of national RTOs which do not participate directly in the project but join specific ÆRTOs joint activities, could be taken into account at a later stage. - These objectives were fully met during the execution of WP1.

2.1 Deliverable D1.1: "A structured and comparative inventory of RTO's" –submitted to the EC (delivery month 4)

The meetings, workshops and study visits undertaken in WP1 aimed at understanding the RTOs strategies and operations. This served as a basis to discover synergies and establish a structured cooperation on specific programmes. This inventory not only helped to better understand each RTOs way of working, but also to discover and understand the specific context of ÆRTOs scope to develop joint programmes. The understanding of each others strategies, R&D portfolio and governance structures enabled the ÆRTOs partners to focus their activities from the very beginning on the project's actual scope: joint programming.
A project analysis of RTO cooperation in FP6 manifested that there already is a great deal of mutual cooperation in the context of the European Research Framework Programme (FP). This cooperation takes place in many projects throughout FP6. Yet, this cooperation is largely stimulated by EU funding and generally stops at the end of the funding period. Against this background, the scope of ÆRTOs was to foster a long-term cooperation between different RTOs, partly with provisions of their own institutional funding.

First results of the mutual learning of RTOs structure, organization and strategies were laid out in *Deliverable D1.1, "Inventory of RTO activities*". The comparative study reflected the major points of discussions, especially on defining and finding consensus about key topics which will be worked on further. The main purpose of this study was to lay the strategic foundations for the deployment of the resources for operative collaboration projects among the ÆRTOs partners. The main findings are listed below:

- Joint ÆRTOs Programme attributes/criteria are needed, such as:
  - A defined strategic scope of the programme.
  - The programme as a kind of "umbrella" for numerous projects with a common goal. A clear difference is made between a project and a programme; a programme has a medium to long-term character.
  - A detailed programme description regulates the operation of the programme.
  - The programme should be evaluated after a certain period of time, and eventually adapted to new framework conditions or closed down.
  - There is a group responsible for the programme management and a supervisory body.
  - The programme needs a special funding instrument.

- Regulations to be met when operating a Joint Programme:
  - Scope of the programme

- Governance model for programming activities; i.e. duration, budget frame, participants, decision-making, analysis and reporting
- Financing, i.e. allocation principles for funding and resources
- Structure of the projects; i.e. participants, size, duration
- Criteria for the approval of proposals
- Procedure for application, approval and evaluation
- Model agreement for project activities as well as IPRs and other resulting measures after finishing the projects
- Reporting

2.1 Deliverable D1.3: "Organize up to 5 joint workshops"

–submitted to the EC (delivery month 2-5)

To foster exchange of information between the RTOs, five workshops on different topics were organized. The workshops gathered the responsible RTOs experts from each respective RTO and are listed below:

	Date	**Topic**	**Place**	**Participants**
1	14.05.2008	Workshop on Strategic Mission	Brussels, Fraunhofer	CEA, SINTEF, VTT, Fraunhofer, EARTO, TNO
2	06.06.2008	Workshop on Corporate Governance	Brussels, (EARTO)	CEA, EARTO, SINTEF, VTT, TNO, Fraunhofer, Tecnalia
3	18.06.2008	Workshop on Scientific strategy (process and topic)	Oslo (SINTEF)	CEA, EARTO, SINTEF, VTT, TNO, Fraunhofer
4	10.09.2008	SME-workshop	Helsinki (VTT)	VTT, SINTEF, Fraunhofer, TNO, CEA, EARTO
5	16.09.2008	Financial and administrative issues	Munich (Fraunhofer)	SINTEF, VTT, Fraunhofer

2.2 Deliverable D1.2: "Identify and exchange good practice"

- submitted to the EC (delivery month 6)

A special focus was placed on the topic "exchange of RTOs best practises". Establishing a joint programme requires a common understanding among all partners about the goal of the project and the existing variety of options. Thus, it was necessary to select the most appropriate options. This largely happened during the workshop on exchange of "best practises", taking place on 19 June 2008 in Oslo. The workshop focused on understanding each others strategies and to find individual practises, or a synopsis of several practices, which could serve as a basis for future common programmes. Hence, a pool of ideas was generated that helped to decide what best practises to choose. These results are documented in Deliverable D1.2 "Report on good practice".

The collection and discussions of good practises served ÆRTOs twofold: On the one hand it improved our understanding of each other and the context of the work of the different RTOs. Thus it continued the inventory of the RTOs activities in terms of "Learning" about each other (objective WP1). On the other hand selecting practises or certain aspect of practices, with particular potential to be adapted for the use in a future joint programme helped the consortium to become concise in WP2 and WP3. Therefore the practises have been analysed and clustered in terms of similarities. Three categories (see below) were identified that helped to continue the design of actual joint programmes - and that formed the basis for work in WP2.

1) Practises for joint R&D programmes
2) Practises for joint programmes other than straight forward joint R&D, i.e. common foresight studies, common SME-services, etc.
3) Practises that could serve as incubators of finding suitable topics and people for joint R&D or other joint programmes

2.3 *Deliverable D1.4*: "Up to 20 individual short study visits"

- submitted (delivery month 6 - has been extended to project month 36)

Upon a decision by the Board the deadline for study visits has been extended until the end of the project in order to facilitate exchange on further topics also at a later stage.

Overview study visits

Nr.	Travelling Organization	Visited Organization	Date
1	VTT	SINTEF	10/11 April 2008
2	TNO	SINTEF	30 May 2008
3	SINTEF	VTT	16/17 June 2008
4	CEA	SINTEF	20 June 2008
5	SINTEF	TNO	26 June 2008
6	Fraunhofer	VTT	15 September 2009
7	Fraunhofer	TNO	19-22 September 2011

3 WP2 "Programming and Experimenting"

WP2 is finalized and deliverable D2.1 "Prioritized shortlist of cooperation activities" is submitted to the European Commission. Deliverable D2.2 "Quick start pilot action" was shifted to project month 18 in WP3.

The reason for shifting the pilot action to WP3 was to prepare the common projects more profoundly, in terms of defining a scope and necessary guidelines. The Board's decision was therefore to bundle all resources in order to immediately start a pilot programme. The expectation was to learn much more out of a programme rather than from a single pilot project.

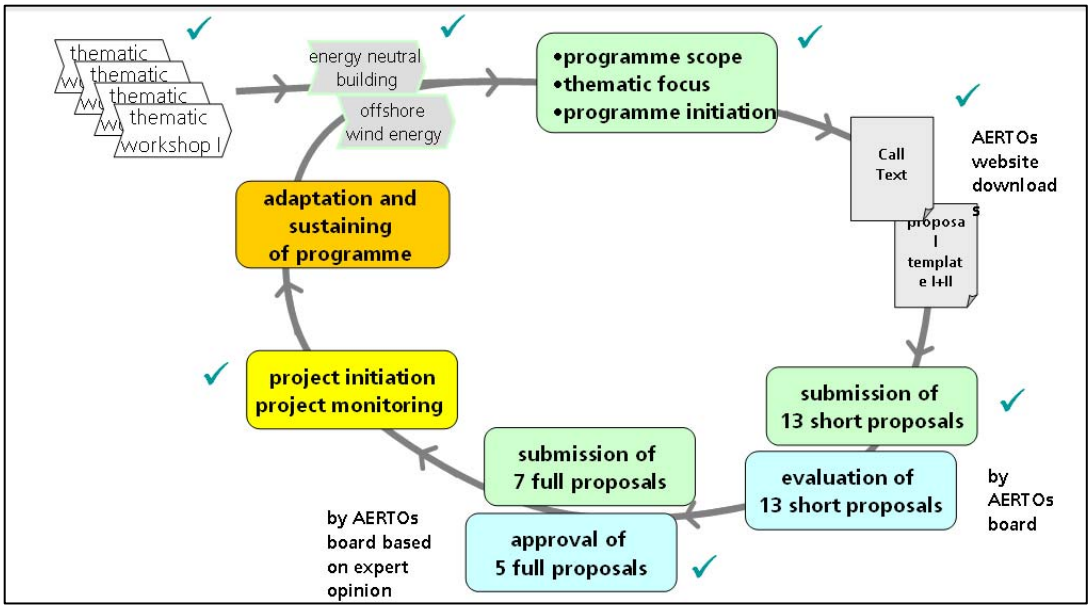
This decision has been taken by the Board members and has been approved by the ECs project officer.

4 WP3 "Planning and Implementing"

The major objectives of WP 3 are to implement the prioritized activities from WP2. The goals are to develop action plans and integrate the lessons learned from quick start projects to implement each of the prioritized opportunities for joint action from WP2. The success here will depend critically on "buy-in" from senior RTO management and from programme owners and will enquire engagement of specialists RTO managers.

After having thoroughly analysed the scope, interest and prospect of mutual cooperation, the objective of WP3 was to draft and agree on guidelines as well as to launch a pilot programme. A preparatory workshop took place aiming at brainstorming on programming approaches and on finding recommendations on a set of best practises. The results are reflected in the guidelines for the first joint call which has been published in May 2009, serving as a basis for the first ÆRTOs pilot programme.
In fact, WP3 dealt with the whole set up of a pilot programme, which was originally only the next step after executing the quick start project. Thus, it can be stated that the goal of launching a quick start project has been executed to a higher extend and in a shorter period of time than originally anticipated.

The following graphic shows the **evolution of the ÆRTOs pilot programme** out of the thematic workshops (*presentation to the ÆRTOs Council on 30 March 2010*)



4.1 Deliverable D3.1: "Detailed action plan"

- Fulfilled

The objective of deliverable D3.1 is to develop action plans while integrating lessons from quick start project. The agreed action plans shall be integrated. Implementation will be lead by a task force comprising strategic and specialist RTO managers.

The ÆRTOs board agreed to choose a theme-focused pilot programme out of the five workshops conducted in WP2. These workshops assembled experts from the RTOs to elaborate

possible areas of cooperation. Out of these workshops, the theme for the first ÆRTOs pilot call on "Sustainable energy with a special focus on Energy Neutral Building (ENB) and Off-shore Wind Energy (OWE)" emerged. The Board selected these topics since they appeared to be the most suitable one for the pilot programme. A milestone was reached when the Board then designed a detailed action plan for the implementation of the pilot programme, i.e. the guidelines for the first ÆRTOs call for Proposals for Collaborative Research Projects on ENB and OWE. Furthermore, these guidelines can also be applied to larger projects in the future and pave the ground for future cooperation of RTOs. - Due to the big interest among RTOs, the Board decided to continue the other four thematic workshops to prepare further collaboration.

Short overview of the workshops (first round):

Workshop	**Short description**
SME	SME experts from the ÆRTOs partners met in September 2008 for the first time and showed joint interest for cooperation, especially on "technology transfer". The concept paper "Fostering innovation in SMEs: Developing an integrated framework and service-delivery concept for European RTOs" served as a basis for discussing cooperation opportunities. The Board agreed in September 2008 to move forward in two directions: 1) to design a draft on new service concepts towards EU funding, 2) to focus on spin-off SMEs and cooperate closer with the EARTO spin-off group. Currently, Fraunhofer is developing a concept of a customer inquiry service platform for SMEs.
Energy Neutral Buildings (ENB)	The first ENB workshop in February 2009 gathered ÆRTOs partner and representatives from the ERA-Net ERACObuild. Topics of mutual interests were identified and further exchange between ÆRTOs and ERACObuild agreed. This topic has been chosen for the ÆRTOs pilot programme. The call for proposals for the pilot programme has been on 20 May 2009.
Human Resources (HR)	The ÆRTOs HR network held a meeting in Munich in January 2009 and agreed to work on an international project management development pipeline for upcoming, high potential project managers with international experience. A first pilot was started in autumn 2011. After a careful evaluation it was decided to run a new session in autumn 2012. The HR Task Force is very active. ÆRTOs role can be considered as catalyser bringing these experts together and helping them to run independently. External partners, such as VITO, are also active in the Task Force.
Security	The first security workshop took place in March 2009 and the security research experts showed a great interest for cooperation. Two topics, secure urban environments and privacy have been chosen to focus on. Action plans were set up to develop these topics further. The work of this working group has made a contribution to the development of the Scientific Research Agenda (SRA) on Resilient Cities (see Chapter 4 "Implementation of prioritized activities").
Off-shore Wind Energy	The OWE workshop took place in February 2009, assembling experts from the ÆRTOs RTOs. OWE - like Energy Neutral Buildings - has been chosen for

(OWE)	a first ÆRTOs pilot programme.

4.1 Deliverable D3.2: "Implementation of prioritized activities"

- Delivered

The objective of deliverable D3.2 is the implementation of the prioritized joint activities, completed or launched during the life-time of the project. After having set-up a detailed action plan and guidelines for a pilot programme, the goal of this next step is to validate this by realizing a pilot programme.

EUROTECH assembles the presidents of the largest European organization for applied research. With their commitment to provide an estimated €2.5 million in total, the presidents of the ÆRTOs RTOs "united" in EUROTECH paved the way for launching the ÆRTOs pilot programme. They also decided that each RTO funds its own successful applicants, rather than using a "common pot".
The next milestone was the launch of the ÆRTOs pilot programme on "Sustainable energy with a special focus on Energy Neutral Building (ENB) and Off-shore Wind Energy (OWE)". The call was published on 25 May 2009 on the website (www.ÆRTOs.eu) and was open to the participating ÆRTOs RTOs. The call was organized as a two-step evaluation process. The submission of a first short proposal ended on 26 July 2009. Out of 13 applications received, 7 proposals were invited to submit a full proposal in the second round (deadline September 15th 2009).

This graphic shows the projects that were elected for the ÆRTOs pilot programme, including information on partners, duration, budget and kick-off dates.

Name	Partners	Kick Off	Total Project sum in EUR	Duration
Grid integration of offshore wind farms *(GRID)*	Fraunhofer, SINTEF, VTT	02.02.2010	385.000	01.01.2010 - 31.12.2011
Towards Energy Efficient City Systems *(TEECS)*	Fraunhofer, SINTEF, VTT, TNO, Tecnalia	9/10.3. 2010	600.000	01.01.2010 - 31.12.2011
Prefabricated multi-functional façade systems for building renovation *(PREFAB)*	Fraunhofer, SINTEF, Tecnalia, SP	29.3.2010	480.000	01.01.2010 - 31.12.2011
Low Cost Corrosion Protection for Off-shore Wind Turbines and Structures *(LCCP-OW)*	Fraunhofer, SINTEF, TNO	2.3.2010	500.000	01.01.2010 - 31.12.2011
Operation and	Fraunhofer, VTT,	7./8.4.2010	420.000	01.03.2010 -

maintenance (monitoring) of Off-shore wind parks (OMO)	TNO			30.09.2011
Breaking the Ice *(ICE)*	Fraunhofer, VTT	01.01.2010 - 31.12.2011	100.000	01.01.2010 - 31.12.2011

By that, WP3 has been successfully fulfilled.

Thematic cooperation did also lead to the successful application of two more FP7 projects ("CRM_InnoNet" and "RetroKit"). Further positive "side-effects" were:

- Strengthened interaction with industry and scientific collaboration
- Strengthened collaboration at researcher level
- Development of ÆRTOs Community to foster future strategic dialogue

To continue strategic cooperation among the ÆRTOs partners, a workshop on Joint Strategy and Foresight was organized on 20 January 2010. The objective was to identify technological themes of joint strategic interest which have the potential to become new programmes within ÆRTOs. The result was the selection of the five topics:

Overview of selected topics of joint strategic interest (second round):

Scarcity of critical materials (TNO) Find alternatives for the first five depleted rare earth materials.
Innovation, development and management of services (VTT) How to increase the productivity of the service sector by x%?
Towards increased Value from Waste (SINTEF) How to recycle x% of all electronic devices within Europe and extract raw materials?
Towards resilient and sustainable cities (Tecnalia) How to develop resilient and sustainable cities in Europe and create a network of Living Labs?
Towards a bio-based economy (TNO) How to achieve 50% bio-based feed into the chemical industry?

Next, detailed action plans were developed, starting with workshops. By august 2011, each workshop had produced input to a 'Green Paper', which contains descriptions on strategic opportunities, long and short term impact, industry need, and a consideration of the EU position on that subject. The green paper served as a background document to rely on for further work. - This was followed by the development of **Strategic Research Agendas** for each topic.

In parallel, the search for funding went on. A lot of effort was invested to receive third-party funding for a mid-to- long-term programme on European and National level. Unfortunately, no suitable funding source has been found. To keep the momentum and advance work, the Board took the decision to choose the most advanced Strategic Research Agenda - Value from Waste-

and present it to the ÆRTOs presidents "united" in EUROTECH in October 2011. A milestone was reached when EUROTECH agreed to provide funding of approximately Mio € 3,5. This commitment enabled the project to start immediately: The kick-off meeting took place on 13 January 2012 in Bilbao.

5 WP4 "Informing and Widening"

Objectives of this work package are to share knowledge of the project with the wider RTO community and other interested parties. Furthermore, to recruit at least two other RTOs as full project partners, to recruit other RTO into specific joint activities. A final objective is to invite other organizations to join as observer or associated member.

The first major event ÆRTOs was presented to, was the EUROTECH meeting on 29/30 March 2009 in Vienna. EUROTECH assembles the presidents of the largest European organization for applied research who meet every six months. A regular update on the progress and achievements of ÆRTOs has since been given at EUROTECH meetings on 4/5 October 2009 (Sevilla), 11/12 April 2010 (Spitsbergen), 3/4 October 2010 (Eindhoven), 10/11 April (Bilbao), 16/17 October 2011 (Gothenburg) and 29/30 April 2012 (Stuttgart).
The Annual EARTO Conferences with over 200 participants from European research and technology organizations served as a good basis to inform a larger group of RTOs about ÆRTOs and to attract new interested members. ÆRTOs was presented at EARTO conferences on 27-29 May 2009 (Paris), 19-21 May 2010 (Gothenburg), 12/13 May 2011 (Warsaw) and 7/8 May 2012 (Geneva).

In addition, ÆRTOs was presented at the ERA-Net-NMP-Workshop in September 2009, aiming to improve networking of different ERA-Nets in the field of NMP and the SAFERA ERA-NET Kick Off meeting in May 2012. Another milestone was the ÆRTOs event "How Research and Technology Organizations Strengthen the Research and Technology base in Europe" on 23 June 2011 in the European Parliament (EP). This event was organized under the patronage of MEP Maria da Graca Carvalho. The objective was to demonstrate the European added value RTOs create and to communicate the framework conditions RTOs need, by presenting examples of successful cooperation such as ÆRTOs, the European Energy Research Alliance and Heterogeneous Technology Alliance (HTA). More than 75 participants from the European Parliament, the European Commission and from the Brussels research scene attended this event, which has led, e.g. to continued contact between the Project Leader for the ÆRTOs Value from Waste initiative and the EIP on Critical Raw Materials. Lastly, the final conference "Building Critical Mass for Innovation" on 28 March 2012 formed a good stage for informing the wider RTO community and research community about the project.

5.1 Deliverable 4.1: "Website"

- published; thus submitted to EC (delivery month 3)

The website is operational under www.ÆRTOs.eu. It informs about the content, management and time table of the project. A dedicated member's area is available where necessary documents for the call for proposals can be downloaded.
Additionally, an e-room is available to the consortium, enabling them to store documents, share a common calendar and exchange information.

5.1 Deliverable 4.2: "Recruitment of additional RTOs"

- fulfilled; new partners joined the project on 30/09/2009

Two organizations, Technical Research Institute of Sweden (SP) and Tecnalia, Spain, demonstrated interest for joining ÆRTOs. After careful consideration they received approval by

the Board (31 July 2009) and the Council (16 September 2009). Consequently, a formal request for modification of the grant amendment was proposed to the European Commission and they were added to the ÆRTOs project on 30 September 2009 retroactively.

Full name and legal form of the beneficiary	**Start date of participation**
FUNDACION TECNALIA RESEARCH & INNOVATION, established in Parque Tecnologico de Bizkaia, Calle Geldo, Edificio 700, 48160 DERIO, SPAIN.	30/09/2009 (retroactively)
EUSKO JAURLARITZA-GOBIERNO VASCO, established in c/Donostia-San Sebastian, 1, 01010 VITORIA-GASTEIZ, SPAIN.	30/09/2009 (retroactively)
SP SVERIGES TEKNISKA FORSKNINGSINSTITUT AB, established in Brinellgatan 4, 50115 BORAS, SWEDEN.	30/09/2009 (retroactively)
RISE Research Institutes of Sweden Holding AB, established in Mäster Samuelsgatan 60, 10361 STOCKHOLM, SWEDEN.	30/09/2009 (retroactively)

5.1 Deliverable 4.3: "Mid-Term Conference"

- submitted to EC (delivery month 25)

The Board decided to align the ÆRTOs mid-term conference (deliverables 4.3) with the EARTO Annual Conference. This implicated a minor shift in time (project month 25 instead of 19) which has been discussed with and approved by the EC's project officer. Thus, the ÆRTOs mid term conference took place alongside the EARTO Annual Conference in May 2010 in Gothenburg, Sweden. The focus laid on presenting the status quo of the project, the evaluation procedure for the pilot programme, the chosen projects and the road ahead. More then 200 representatives from Research and Technology Organizations attended the event.

5.1 Deliverable 4.4: "Final conference"

- submitted to EC (delivery month 48)

The final conference "Building Critical Mass for Innovation" took place on 28 March 2012 (project month 48) in Brussels. The event presented concrete project results, such as the cooperation programme in "Sustainable energy with a special focus on Energy Neutral Building (ENB) and Off-shore Wind Energy (OWE)" and the continuation of the RTOs strategic cooperation with the programme »Value from Waste«. An important message was to show that RTOs are able to cooperate on a strategic level and run programmes with common strategic targets. Another important aspect was to demonstrate the fundamental role RTOs play in the European Innovation System. - However, no suitable European instruments are available to deepen this cooperation. Therefore the message was passed that it is important to receive third party funding for future common programmes.
High level speakers attended the event, such as Member of the European Parliament and Member of the ITRE committee, Prof. Maria da Graça Carvalho and EARTO president Jan

Mengelers. More than 75 representatives from the European Commission, the European Parliament and the Brussels research community participated.
Link to the event: http://www.earto.eu/ÆRTOs-final-conference-programme-and-presentations.html

6 WP5 "Sustaining: Identifying, developing and implementing governance for long-term cooperation activities"

The major objectives of WP 5 are to identify, develop and implement appropriate governance mechanisms and structures for long-term cooperation between RTOs; in particular the strategic operational management and budgetary arrangements for sustained jointly programmed and implemented activities.

6.1 Deliverable D5.1: "Governance models and recommendations"

- Successfully fulfilled

6.2 Deliverable D5.2: "Implementation decisions"

- Successfully fulfilled

After having successfully identified and implemented joint strategic cooperation to test the mechanisms and success factors of longer term cooperation (see WP 2 and 3), the task was now to develop sustainable governance structures. This was a major point of discussion in the Board. Finally, two possible options for a further development of ÆRTOs were identified:

1) Small solution

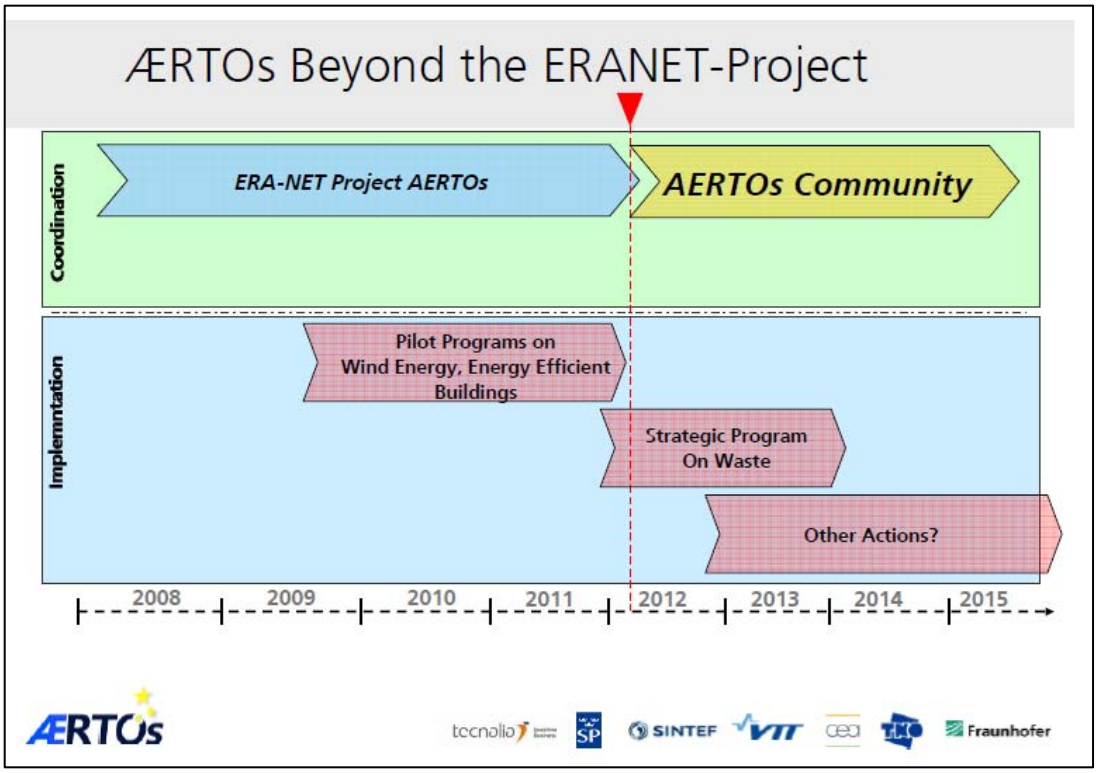
The small solution intends to continue the current cooperation with joint activities and common calls. The organizational structure would also be very similar to the current project structure. This solution would be easy to implement, since it mainly means the continuation of current activities and coordination of internal funding on common initiatives.

2) Extensive institutional ('big') solution

The big solution describes a rather revolutionary view. It aims at offering RTOs expertise and long-term opportunities to address societal challenges. This solution includes setting up a European Innovation Council, consisting of ÆRTOs member organizations, which is responsible for integrating RTOs in and implementing Joint Programming in Horizon2020. The Council will have links with the Industrial Board and the EC and interact closely with a Programme Board. The Programme Board will be responsible for organizing joint activities, such as joint calls, where co-funding for these activities can be received from the EU, RTOs, industry and national ministries. Strong support from the national ministries and from the European Commission is needed to realize this option.

A brainstorming workshop took place with representatives of the European Commission and the ÆRTOs Council to further develop the idea of a 'big solution'. As a result, the idea was born to launch an Article 185 Initiative to provide R&D support to High-growth potential SMEs. Consequently, a concept paper has been prepared on such an Article 185 Initiative by the consortium and presented to the national ministries. In the context of the economic crisis and austerity measures by the governments, commitments cannot presently be made. Consequently the proposal was currently put on hold.
As a consequence, the Board decided to implement the 'small solution' and continue cooperation as 'ÆRTOs Community' which will form the basis for development of further

initiatives towards implementation of the "big" solution. From 1 April 2012 onwards ÆRTOs means the continuation of the strategic initiative developed in the ERANET ÆRTOs by the participating EUROTECH members. It is taken into account that no EU Commission funding is presently available for coordination of ÆRTOs community activities. Therefore this continued initiative is wholly funding using the RTOs public funding.
This Community will facilitate future collaboration towards long-term strategic objectives. It will further accompany and monitor currently running projects, such as "Value from Waste" and help further developing long-term programmes. It is highly desired that future programmes will emerge under the ÆRTOs Community; the upcoming HORIZON 2020 will offer a special opportunity for such developments.

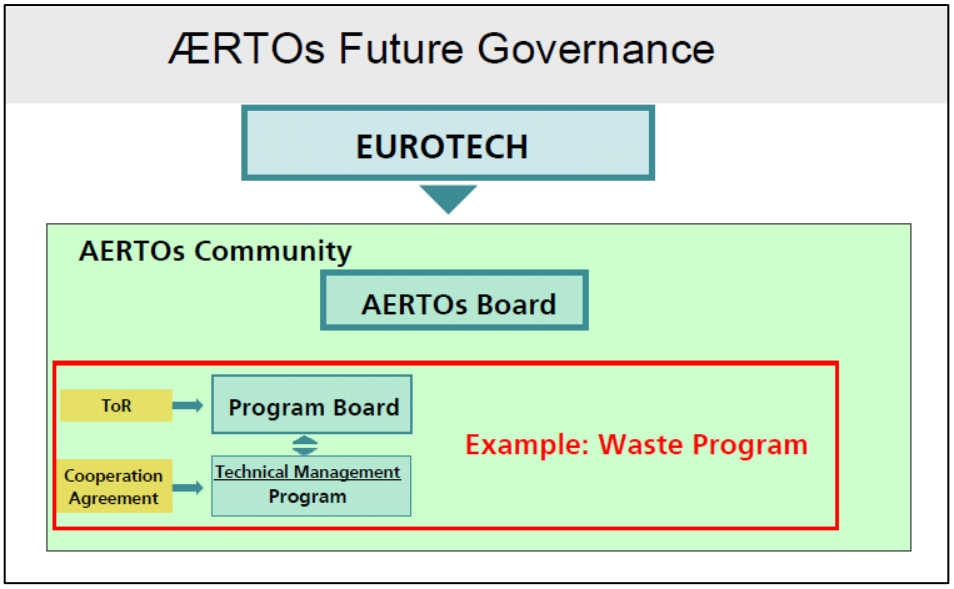


The co-operation will be governed by Terms of Reference (ToR) that enter into force on 1 June 2012. Some major elements of the future ÆRTOs governance, according to the ToR, are that:

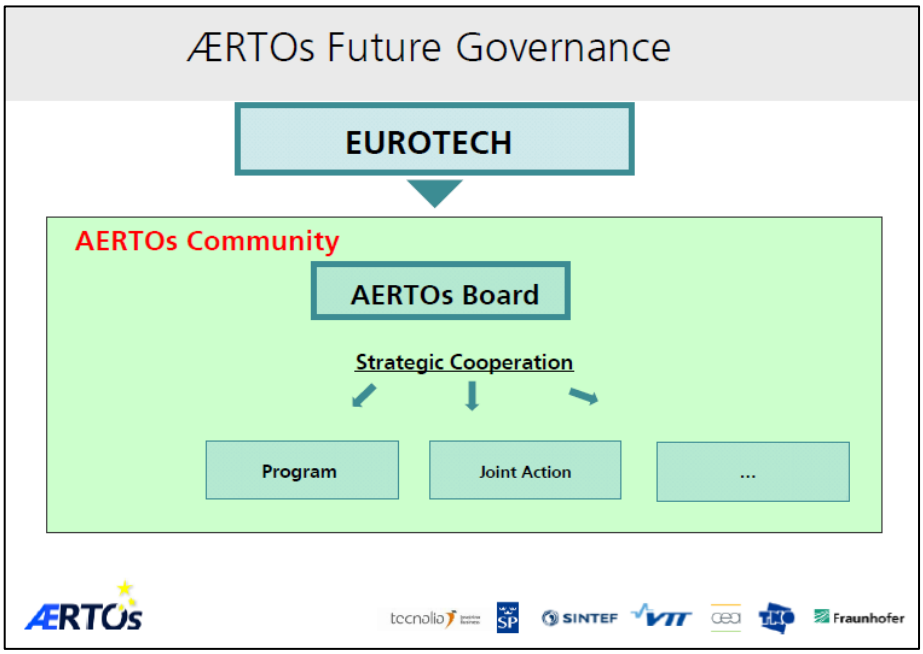
- Partners commit to continue by providing capacities and contributions
- Each partner brings in its own resources for Board and Programme costs
- Partners outside the formerly ÆRTOs partners can be selected for new programmes upon agreement
- The Board will meet regularly
- Regular reporting to EUROTECH presidents.

The ÆRTOs Community consists of the former ÆRTOs Board and works according to ToR. The Community reports to EUROTECH, who act as supervisory body.
One of the ÆRTOs Community Board's major tasks is to foster strategic cooperation in different forms, such as programmes and joint actions. For each individual action, a cooperation agreement will be set up. Further, a Technical Management will be set up undertaking the tasks of monitoring the projects / programmes and reporting to the ÆRTOs Board. This governance structure is currently already implemented with the running "Value from Waste" programme.

Governance Model ÆRTOs Community (1)



Governance Model ÆRTOs Community (2)



These slides were presented to the ÆRTOs Council on 29 March 2012.

WP6 Management

The responsibilities of this Work Package included the efficient and effective management of the project according to the budget and timetable, and to report to the European Commission. Further to facilitate and coordinate the full participation of programme owners and RTO management, and to ensure the openness of the project to the wider RTO community.

The project management was executed by the Fraunhofer Brussels Office in close cooperation with the administrative and legal service in the Fraunhofer headquarters in Munich. One of the first tasks of project management was to finalize the Consortium Agreement at the start of the

project. The project management was responsible for organizing all the ÆRTOs Board and Council meetings of which an overview is given below. This tasks implied responsibilities for coordinating agendas, facilities, inviting experts and writing minutes.
The Management responsibilities also included the amendment of the Grant Agreement with the uptake of two new partners SP and Tecnalia (see WP 4.2).
The Management was further responsible for organizing all events, such as on 23 June 2011 ("How Research
and Technology Organizations strengthen the research and innovation base in Europe") with more than 75 participants or the final event ("Building Critical Mass for Innovation") on 28 March 2012 in Brussels.

7.1 Deliverable 6.1: "4 six-monthly progress reports"

- submitted to EC (delivery month 25)

With the delivery of this last progress report to the EC, all four six-monthly progress reports are submitted.

7.2 Deliverable 6.2: "Mid-term report"

- submitted to EC

7.3 Deliverable 6.3: "Final report"

- Not yet submitted

7.4 Deliverable 6.4: Minutes of 7 Council Meetings

- delivered

7.5 Deliverable 6.5: Minutes of 13 Board meetings

- delivered

Overview ÆRTOs Board Meetings

YEAR	Date	Place
2008	07/08 April*	Dresden, Germany
	17 September	Paris, France
	28 May	Madrid, Spain
	19 June	Oslo, Norway
	21/22 July	Munich, Germany (WS)
	09-11 September 2008	Helsinki Finland (incl. WS),
	14/15 October	Brussels, Belgium
	21 November	Brussels, Belgium
2009	09/10 February	Oslo, Norway
	04 March	The Hague, Netherlands
	04 May	Paris, France
	05 June	Espoo, Finland*
	30/31 July	Brussels, Belgium
	15 September	Helsinki, Finland
	16 October	Brussels, Belgium
	10 December	Brussels, Belgium

2010	20 January	Brussels, Belgium
	16 March	Bilbao, Spain
	09 August	Telephone Conference
	01 September	Stockholm, Sweden
	28 October	Brussels, Belgium
	14 December	Munich, Germany
2011	23 February	Munich, Germany
	03 March	Telephone Conference
	06 April	Oslo, Norway
	09 May	Telephone Conference
	13 July	Telephone Conference
	14 September	Brussels, Belgium
	11 October	Munich, Germany
	18 November	Brussels, Belgium
	22 December	Telephone Conference
2012	19 January	Telephone Conference
	29 February	Telephone Conference

Role of the ÆRTOs Council

The Project Council is the forum of RTO programme owners, assembling representatives of the ministries. The Council member's task was to raise professionalism and expertise in the project while monitoring the project and giving feedback, .The Council served as platform to increase understanding amongst national representatives on how RTO mandating and funding regimes operate elsewhere in Europe. The Council members met every six months with the Project Board and were fully engaged in discussions and decisions about long-term cooperation plans and related governance issues. This structure has proven to be valid.

ÆRTOs Council meetings

YEAR	**DATE**	**PLACE**
2008	07 April	Dresden, Germany
	18 September	Paris, France
2009	05 March	The Hague, The Netherlands
	16 September	Helsinki, Finland
2010	17 March	Bilbao, Spain
	02 September	Stockholm, Sweden
2011	07 April	Oslo, Norway
	12 October	Munich, Germany
2012	29 March	Brussels, Belgium

8 Milestones and Deliverables

Milestone	Partner responsible	Date (dd/mm/yyy)	Progress	Comments
Project Kick off meeting	*Fraunhofer*	*07/04/2008*	*First meeting of all participants. Exchange of expectations; project planning.*	*Presented basis and objectives for the further project work.*
Inventory of RTO activities	*SINTEF*	*29/10/2008*	*Basis for systematic comparison between RTOs. Laid strategic foundations for the deployment of resources for mutual collaboration.*	
Workshop on exchange of good practices	*SINTEF*	*19/06/2008*	*Collection of a pool of ideas for possible good practises.* *Improved understanding of each other and the context of work of the different RTOs.*	
Guidelines for the first Joint Call	*TNO*	*25/05/2009*	*The detailed action plan (=guidelines) formed the basis for the implementation of the pilot. These guidelines can also be applied to larger projects and pave ground for future cooperation among RTOs.*	*With the set-up of a whole pilot PROGRAMME (instead of pilot project) the scope of WP2 has been fulfilled to a much higher extend!*
Implementation of prioritized activities (pilot programme)	*TNO*	*6 pilot projects have started between 02/02/2010 and 08/04/2010*	*Validation of guidelines via the pilot programme (projects) on "Off-shore wind energy and Energy Neutral Buildings". In total, five pilot projects have been started:* *(1) Grid integration of offshore wind farms* *(2) Towards energy efficient cities* *(3)Prefabricated multifunctional façade systems for building renovation* *(4)Low cost corrosion protection of Off-shore wind turbines and Structures* *(5) Operation and maintenance of off-shore wind parks* *(6) Breaking the ice*	*Lessons learnt:* (0*) The way the central budget is distributed in RTO's can lead to difficulties in terms of flexibility for providing own basic funding for ad-hoc strategic collaboration.* *(1) Seed money is a good way to foster collaboration – confirming the need for a new collaborative instrument to achieve impact* *(2) Exchange of personnel for short to long periods of time is a good way to "kick-start" new collaboration* *(3) New collaboration initiatives*

Workshop on Joint Strategy and Foresight	*TNO*	*20/01/2010*	*Identification of technological themes of Joint Strategic Interest with potential to become new programme within ÆRTOs*	
Strategic Research Agendas (SRA)	*TNO*	*Different delivery dates for the four SRA during 2011 until January 2012*	*Generation of SRA-Reports:* *(1) "Towards Sustainable and Resilient Cities"* *(2) "Strategic Research Agenda and Implementation Action Plan for Services"* *(3)" Value from waste: sustainable recovery of scarce metals and safe management of nanowaste"* *(4)" Towards a biobased economy"*	
Kick off project "Value from Waste"	*SINTEF*	*13 January 2012*	*Implementation of a prioritized activity that is targeting one a major European and global challenge: Recycling of electronic devices within Europe and extraction of rare materials*	
Event "How Research and Technology Organizations strengthen the Research and Technology base in Europe"	*Fraunhofer*	*23/06/2011*	*- Demonstration of the European added value of RTOs. Communication of the framework conditions RTOs need for successful cooperation, by taking the example of ÆRTOs.* *- Information and dissemination targeting decision makers from the European Institutions and representatives from the European research community.*	
Final Conference "Building Critical Mass for Innovation"	*Fraunhofer, EARTO*	*28/03/2012*	*Information and dissemination of the achievements of the project.*	
Enlargement of consortium with four new partners	*Fraunhofer*	*30/09/2009*		*Even though the new partners early demonstrated their interest for joining, the actual procedure was lengthy and the EC decision was only received in July 2010. One reason was that the request for the Grant*

				amendment also included the request for project prolongation of 1 year.
Sustainable Governance Models			*Option 1: Small solution Continuation of current cooperation with joint activities and joint calls. The governance structure is similar to existing programme.* *Option2: Big Solution The objective is to offer RTO expertise to address societal challenges. The governance structures foresees to set up a European Innovation Council, being responsible for integrating RTOs and implementing Joint Programming in HORIZON 2020. The Council is to have links with the Industrial Board and the EC and interacts closely with the Governing Board.*	
Brainstorming workshop with EC	*EARTO/ Fraunhofer*	*13/09/2011*	*Brainstorming on how to enhance "big solution" for resulted in the idea to initiate an Article 185 Initiative on SMEs. A Concept paper has been drafted on that Initiative.*	*Ministries reaction towards concept paper on Article 185 Initiative on SME was reserved. The reason is the co-funding nature of this initiative, making their commitment difficult in times of financial austerity.*
Implementation decision / terms of reference	*CEA*	*28/03/2012*	*Decision to continue collaboration as "ÆRTOs Community" from 1 April 2012 on. The Community builds upon the strategic initiative developed in the ERA-Net ÆRTOs and will enable future strategic collaboration towards long-term objectives. The Community will also continue to monitor running projects, such as "Value from Waste". The cooperation of the Community is governed by Terms of references. Partners commit to*	

			continue with own resources, taking into account that no EC funding is available. Partners outside EUROTECH can be selected for new programmes upon agreement.	

Del. Nr.	**Deliverable Name**	**WP Nr.**	**Delivery month**	**delivered**	**Responsible partner**
1.1	Inventory of RTO activities	1	4	yes	SINTEF
1.2	Report on good practice	1	6	yes	SINTEF
1.3	Up to 5 Workshops	1	4	yes	SINTEF
1.4	Up to 20 Study visits	1	17	yes	SINTEF
2.1	Prioritised shortlist of cooperation opportunities	2	6	yes	VTT
2.2	Quick-start pilot action(s)	2	15	yes	VTT
3.1.	Detailed action plan	3	15	yes	TNO
3.2	Implementation of prioritized action	3	15	yes	TNO
4.1.	Website	4	3	yes	Fraunhofer
4.2	Recruitment of additional RTOs	4	17	yes	Fraunhofer
4.3	Mid-term conference	4	25	yes	Fraunhofer
4.4	Final conference	4	48	yes	Fraunhofer
5.1.	Governance Models and recommendations	5	48	yes	CEA
5.2.	Implementation decision	5	48	yes	CEA
6.1	4 six-monthly reports	6	6,12,24,42	yes	Fraunhofer
6.2	CA (consortium agreement)	6	6	yes	Fraunhofer