# Wind European Industrial Initiative Team

# 2011 EWI Work Programme

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# SECTION I: Introduction

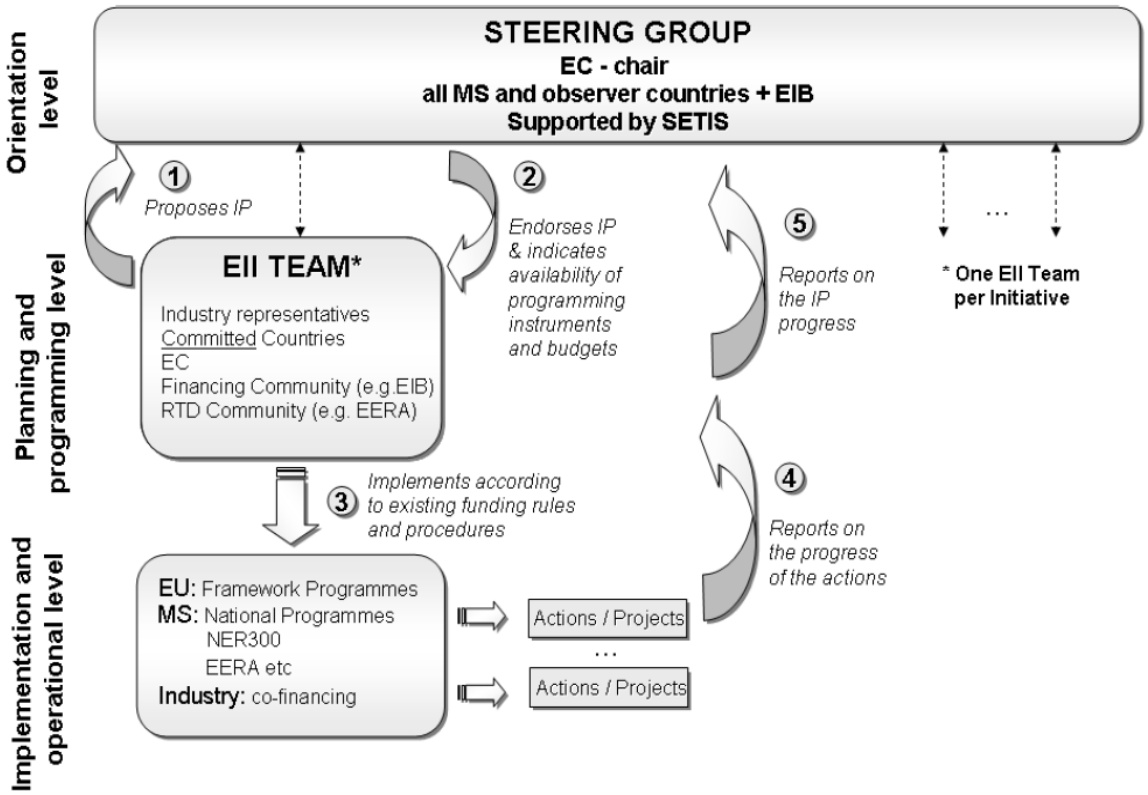
## Purpose of the document

The purpose of this document is to outline the 2011 European Wind Initiative (EWI) Work Programme, i.e. a detailed list of calls for proposals and budget allocations that EU and national funding authorities will need to put into action to ensure the proper implementation of the Initiative in 2011.

The EWI will be funded by existing instruments, at least for the current EU Financial Perspectives (i.e. up to 2013): no new schemes, budget lines or EU agencies will be created for this purpose. However, all relevant instruments (at both EU and national level – for committed Member States) should focus on its priorities and activities, hence increasing the coordination and total amount of wind power R&D investments in the EU. Tight cooperation between EU and national authorities will therefore be essential.

The allocation of relevant EU and national public funds is to be discussed and agreed by the Wind European Industrial Initiative (EII) Team, which is composed of EU, national and European Wind Energy Technology Platform (TPWind) representatives. The Wind EII Team, which met for the first time in Brussels on 19 May 2010, represents the main mechanism to achieve the coordination required to translate the EWI into reality.

The main deliverables of the Wind EII Team will be yearly EWI Work Programmes, which will have to be reviewed and approved by the SET-Plan High Level Steering Group (SG) before being implemented. The following diagram presents the implementing structure of EWI.



In order to be put into action in 2011, this Work Programme has to be approved by the SET-Plan High Level SG before the end of 2010. The process leading to its final approval is summarised by the following Gantt chart, which also provides an overview of the entire process timeframe:

| **Time / Action** | May | June | July | August | September | October | November |
|---|---|---|---|---|---|---|---|
| First Wind EII Team meeting and presentation of EWI 2010 – 2012 Implementation Plan | 19 May | | | | | | |
| Official launch of the EWI | | 3 June | | | | | |
| Development of 2011 EWI Work Programme first draft | | | | | | | |
| Second Wind EII Team meeting | | | | | 13 September | | |
| Development of 2011 EWI Work Programme final draft and approval by Wind EII Team | | | | | | | |
| Submission of 2011 EWI Work Programme to SET-Plan SG | | | | | | | |
| Final review and approval of 2011 EWI Work Programme by SET-Plan SG | | | | | | | |

## Background

The current Work Programme represents one of the major outputs of the European Wind Initiative (EWI), which is one of the Industrial Initiatives included in the European Commission's Strategic Energy Technology Plan (SET-Plan).

The European Wind Energy Technology Platform (TPWind)[1] was given the task to draw up the EWI in 2008, after the publication of its Strategic Research Agenda[2]. Member States and EU Institutions have, since then, cooperated with TPWind in the development of the European Wind Initiative.

The EWI, a large-scale, long-term programme for the support of wind power R&D, was finalized in the summer of 2009, submitted to the European Commission, presented to Member States and eventually published under the name of Wind Energy Roadmap (WER) in the EC Communication on "Investing in the Development of Low Carbon Technologies" (COM(2009) 519), released on 7 October 2009[3]. The EWI and the WER can therefore be considered as the same document.

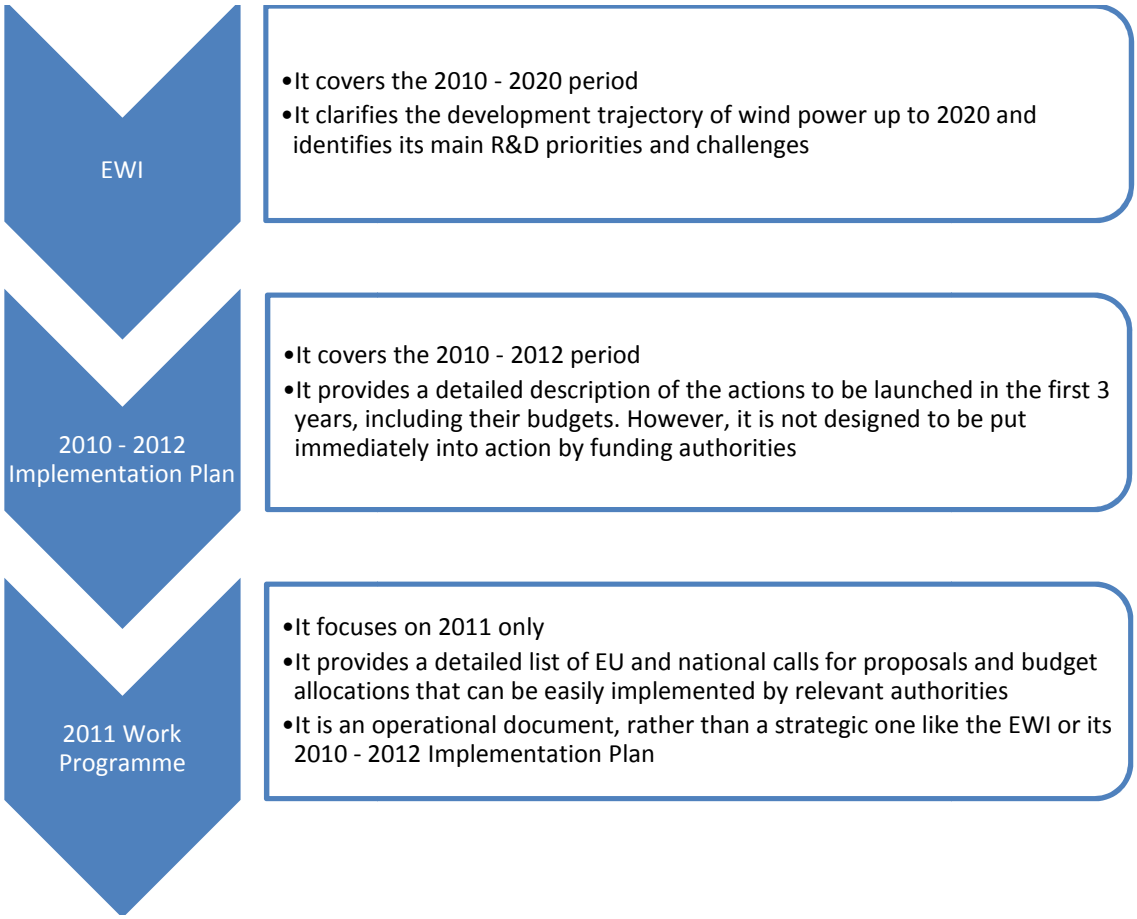
The EWI was presented at the Stockholm SET-Plan workshop[4] held on 21 and 22 October 2009, and officially launched at the Madrid SET-Plan conference[5] organized on 3 and 4 June 2010.

The EWI is now set to become one of the most important instruments for the development of wind energy in Europe, thanks to its € 6 bn budget for the 2010 – 2020 period, which will be composed of both public and private resources.

[1] www.windplatform.eu
[2] http://www.windplatform.eu/92.0.html
[3] http://ec.europa.eu/energy/technology/set_plan/set_plan_en.htm
[4] http://www.energimyndigheten.se/en/Press/News/Document-SET-Plan-Conference/
[5] http://www.setplan-conference2010.es/Publico/Programme/index.aspx?idioma=en

Following the official launch of the EWI, the European Commission published its 2010 – 2012 Implementation Plan[6], which was produced by TPWind in cooperation with the Wind EII Team. The Implementation Plan details how the EWI should be implemented in the 2010 – 2012 period and represents the starting point for the development of this 2011 Work Programme.
The 2010 – 2012 Implementation Plan also includes a detailed description of EWI activities, key performance indicators (KPIs) and budget estimations.

The relationships between the EWI, its 2010 – 2012 Implementation Plan and its 2011 Work Programme are outlined by the diagram below.




## EWI budget

The implementation of the EWI will require an average yearly public and private investment of approximately € 545 m (for 11 years, i.e. from 2010 to 2020, totalling € 6 bn by 2020).

The EWI total and 2010 – 2012 budgets are outlined in the table below, which also provides the budget intensity (i.e. percentage of total costs) of the EWI Implementation Plan.

[6] http://ec.europa.eu/energy/technology/initiatives/initiatives_en.htm

| EWI strand | Total budget (€ m) | 2010 – 2012 budget (€ m) | Budget intensity |
|---|---|---|---|
| 1. New turbines and components | 2.500 | 763 | 30% |
| 2. Offshore technology | 1.200 | 315 | 26% |
| 3. Grid integration | 2.100 | 337,33 | 16% |
| 4. Resource assessment and spatial planning | 200 | 36 | 18% |
| **Total with EEPR funds** | **6.000** | **1.451,33** | **24%** |
| **Total without EEPR funds** | **6.000** | **932,33** *(Total EEPR funds: 519)* | **15,5%** |

It should be noted that work on grid integration and wind resources (i.e. on strands 3 and 4 of the EWI) will be extremely important for ensuring a proper deployment of wind power in Europe over the next ten years.
For this reason, the Wind EII Team should consider the possibility of:

- Increasing fund allocations for these strands and/or
- Reducing the industry financial contribution to relevant projects and, at the same time, increasing that of the public sector, in order to accelerate and facilitate their implementation.

According to TPWind estimates[7], the wind industry should cover 52% of the EWI 2010 – 2012 budget, i.e. € 1.451,33 m. This amount can be reduced to € 932,33 m if "European Energy Programme for Recovery" (EEPR) funds[8], allocated in 2009, are taken into consideration.
The amount not covered by the industry should be provided by EU Institutions (31%) and Member States (17%). EU Institutions should therefore invest € 289 m over the 2010 – 2012 period, while Member States should provide € 158,5 m and the industry € 484,83 m.
It should be noted that these figures are slightly different in comparison to those provided in the 2010 – 2012 EWI Implementation Plan, because of different approximations used in this document.

Indicative annual funding targets for the 2010 – 2012 period and for this Work Programme (i.e. covering the first 2 years, 2010[9] and 2011) are presented below:

| **Funding player / funding targets** | **Indicative annual funding targets for the 2010 – 2012 period** (covered by the current EWI 2010 – 2012 Implementation Plan) | **Indicative 2010 – 2011 funding targets** (this Work Programme covers both 2010 and 2011, i.e. 2 years, since there was no 2010 EWI Work Programme) |
|---|---|---|
| **EU Institutions** | € 96,33 m | € 192,66 m |
| **Member States** | € 52,83 m | € 105,66 m |
| **Industry** | € 161,61 m | € 323,22 m |
| **TOTAL** | **€ 310,77 m** | **€ 621,54 m** |

[7] Please refer to the "Wind European Industrial Initiative Team 2010 – 2012 Implementation Plan": http://ec.europa.eu/energy/technology/initiatives/initiatives_en.htm.
[8] http://ec.europa.eu/energy/grants/2009_07_15_en.htm.
[9] The EWI also applies to 2010, so this Work Programme needs to cover both 2010 and 2011.

It should be noted that industry investments to complement EEPR funds (approximately € 2.1 bn, according to TPWind estimates) have not been included in this Work Programme. The private sector will therefore play a key role in the implementation of the EWI over the 2010 – 2011 period. Industry contributions to this Work Programme have always been calculated in order to cover, whenever possible, 52% of the budget of each EWI strand.

The industry financial contribution to the EWI will consist in co-funding projects supported by public authorities, since public funds hardly cover 100% of project costs. This means that the private sector will not be requested to create a EWI fund or to directly invest in projects lead by third parties: it will just have to complement the public funding granted to EWI projects.

Finally, a more detailed breakdown of the indicative 2011 EWI Work Programme funding targets, divided by strands and based on the 2010 – 2012 EWI Implementation Plan, is provided in the table below:

| **EWI strand / budget** | **Indicative 2011 EWI Work Programme funding targets** |
|---|---|
| 1. New turbines and components | € 542 m |
| 2. Offshore technology | € 243,34 m |
| 3. Grid integration | € 264 m |
| 4. Resource assessment and spatial planning | € 28 m |
| **TOTAL** | **€ 1.077,34 m**[10] |

[10] This figure includes EEPR funds for the 2010 – 2011 period (see activities 1.3.1, 2.2.1, 3.1.1 and 3.1.2 in the following sections of this document)

## SECTION II: 2011 EWI Work Programme matrix

The purpose of the following table is to summarize the 2011 EWI Work Programme conclusions and funding recommendations. For a detailed description of the rational behind this table, please refer to section III.

| EWI activity | Public resources already allocated (up to 2010) | Suggested EU funding scheme(s) and budget in 2011 | Suggested national funding scheme(s) and budget in 2011 | Industry contribution in 2010 - 2011 | TOTAL *(including resources already allocated – i.e. funding target for 2010 – 2011)* |
|---|---|---|---|---|---|
| **Strand 1: New turbines and components** | | | | | |
| 1.1.1: Large scale turbines and innovative design for reliable turbines (10 – 20 MW) | Approximately € 30 m (through FP6 and FP7) | FP7 topic on new materials for large scale turbines (in 2012 Energy Work Programme).<br>Budget: € 10 m<br>This topic could be a joint Energy-NMP action | / - None | € 40 m | **€ 80 m** |
| 1.1.2: Improved reliability of large turbines and wind farms | € 5,9 m (through FP7 - € 5 m allocated through 2010 call to be shared equally with activity 3.2.1) | FP7 topic on reliability of new turbines (in 2012 Energy Work Programme).<br>Budget: € 10 m | Member States to focus on improving reliability of existing turbines and components (4 – 10 MW range).<br>Interested countries: Germany, Norway, the UK, Sweden, The Netherlands, Spain and Belgium.<br>Cumulative budget (for all Member States): € 10 m | € 16,1 m | **€ 42 m** |

| EWI activity | Public resources already allocated (up to 2010) | Suggested EU funding scheme(s) and budget in 2011 | Suggested national funding scheme(s) and budget in 2011 | Industry contribution in 2010 - 2011 | TOTAL *(including resources already allocated – i.e. funding target for 2010 – 2011)* |
|---|---|---|---|---|---|
| 1.1.3: Turbine optimisation and demonstration for complex terrains | See activity 1.1.4 (funding targets are merged) | | | | |
| 1.1.4: Turbine optimisation and demonstration for extreme climates | / - None | / - None | Member States to focus on optimization of turbines to both complex terrains and extreme conditions.<br>Interested countries: Sweden, Finland, Austria and Spain.<br>Cumulative budget (for all Member States): € 5 m | € 5 m | **€ 10 m** |
| 1.2.1: Definition of methods and standards for testing large wind turbine components | / - None | FP7 topic on turbines upscaling approaches and risk management (in 2012 Energy Work Programme).<br>Budget: € 5 m | / - None | € 5 m | **€ 10 m** |
| 1.2.2: Improvement of size and capabilities of system-lab testing facilities for 10 – 20 MW turbines | See activity 1.2.3 (funding targets are merged) | | | | |
| 1.2.3: Field testing facilities for 10 – 20 MW turbines aimed at increasing reliability | € 40 m (through EEPR) | EIB loan: € 50 m (Individual Loans)<br>EIB equity: € 20 m (Marguerite Fund) | Member States to expand existing facilities and establish new ones (in cooperation with the industry).<br>Interested countries: the UK, Portugal, Finland, Denmark, Spain and Austria.<br>Cumulative budget (for all Member States): € 20 m | € 70 m | **€ 200 m** |

| EWI activity | Public resources already allocated (up to 2010) | Suggested EU funding scheme(s) and budget in 2011 | Suggested national funding scheme(s) and budget in 2011 | Industry contribution in 2010 - 2011 | TOTAL *(including resources already allocated – i.e. funding target for 2010 – 2011)* |
|---|---|---|---|---|---|
| 1.3.1: Large scale manufacturing and logistics, both size and numbers for in and out of factory and site erection | € 105 m (through EEPR) | / - None | Member States to develop mass-manufacturing facilities (in cooperation with the industry).<br>Interested countries: the UK, Sweden, Spain.<br>Cumulative budget (for all Member States): € 20 m | € 75 m | **€ 200 m** |
| *TOTAL STRAND 1* | *€ 180,9 m* | *€ 95 m* | *€ 55 m* | *€ 211,1 m* | ***€ 542 m*** |
| **Strand 2: Offshore technology** | | | | | |
| 2.1.1: Deep offshore and site identification for demonstration of large-sale substructures | Approximately € 35,5 m (through FP7) | / - None | / - None | € 4,5 m | **€ 40 m** |
| 2.2.1: Industry-wide initiative on mass-manufacturing of substructures | € 153 m (through EEPR) | / - None | / - None | € 47 m | **€ 200m** |
| 2.3.1: Standards | / - None | FP7 topic on standardisation and technology transfer from oil & gas sector (in 2012 Energy Work Programme).<br>Budget: € 3,34 m<br>This topic could be an ERANET PLUS action. | / - None | / - None | **€ 3,34 m** |
| *TOTAL STRAND 2* | *€ 188,5 m* | *€ 3,34 m* | */ - None* | *€ 51,5 m* | ***€ 243,34 m*** |

| EWI activity | Public resources already allocated (up to 2010) | Suggested EU funding scheme(s) and budget in 2011 | Suggested national funding scheme(s) and budget in 2011 | Industry contribution in 2010 - 2011 | TOTAL *(including resources already allocated – i.e. funding target for 2010 – 2011)* |
|---|---|---|---|---|---|
| **Strand 3: Grid integration** | | | | | |
| 3.1.1: Combined solutions for wind farm grid connection and interconnection of at least two Countries | € 150 m (though EEPR) | FP7 topic on grid connection technologies for offshore wind farms (in 2012 Energy Work Programme).<br>Budget: € 10 m | / - None | / - None | **€ 160 m**<br>Instead of € 150 m as planned, since the FP7 topic is required to complete EEPR investments. Additional industry investments are therefore not necessary (only to complement the FP7 project) |
| 3.1.2: Controllable HVDC multi-terminal offshore and onshore solutions | € 74 m (through EEPR) | / - None | Member States to invest on the development of large meshed DC grids, especially offshore and in the North Sea.<br>Interested countries: Norway, Sweden, France, Finland, Belgium and Italy.<br>Cumulative budget (for all Member States): € 10 m | € 20 m | **€ 104 m** |
| 3.2.1: Wind power plants requirements and solutions to wind farms supporting the system dynamics | € 18,35 m (through FP7 – total relevant allocations: € 36,7 m, to be shared equally with activities 3.3.1 and 1.1.2) | / - None | / - None | / - None | **€ 18,35 m**<br>Instead of € 10 m as planned, thanks to extra FP7 allocations in the 2010 call for proposals. Additional industry investments are therefore not necessary (only to complement FP7 projects) |

| EWI activity | Public resources already allocated (up to 2010) | Suggested EU funding scheme(s) and budget in 2011 | Suggested national funding scheme(s) and budget in 2011 | Industry contribution in 2010 - 2011 | TOTAL *(including resources already allocated – i.e. funding target for 2010 – 2011)* |
|---|---|---|---|---|---|
| 3.3.1: Balancing technologies for large scale wind power penetration | This activity is not relevant for 2010 - 2011 | | | | |
| 3.3.2: Market integration | This activity is not relevant for 2010 - 2011 | | | | |
| *TOTAL STRAND 3* | *€ 242,35 m* | *€ 10 m* | *€ 10 m* | *€ 20 m* | ***€ 282,35 m***[11] |
| **Strand 4: Resource assessment, spatial planning and social acceptance** | | | | | |
| 4.1.1: Data sets for new models for wind energy | / - None | FP7 topic on identification of measurement techniques and sites (in 2012 Energy Work Programme).<br>Budget: € 5m<br>This topic could be an ERANET PLUS action | Member States to invest on the identification of sites and definition of standards.<br>Interested countries: France, Finland, The Netherlands, Germany, Sweden, Norway, Spain and Italy.<br>Cumulative budget (for all Member States): € 5m | € 6 m | **€ 16 m** |
| 4.2.1: Coordination process for on and offshore spatial planning | € 1 m (through IEE) | IEE topic on the integration of relevant EU projects on spatial planning (2011 call for proposals).<br>Budget: € 2 m | Member States to invest on transfer of onshore spatial planning methodologies to offshore.<br>Interested countries: Portugal, The Netherlands, Germany, Spain and Italy.<br>Cumulative budget (for all Member States): € 2m | € 5 m | **€ 10 m** |

[11] This amount is slightly higher than initially forecasted (i.e. € 264 m), as highlighted in activities 3.1.1 and 3.2.1

| EWI activity | Public resources already allocated (up to 2010) | Suggested EU funding scheme(s) and budget in 2011 | Suggested national funding scheme(s) and budget in 2011 | Industry contribution in 2010 - 2011 | TOTAL *(including resources already allocated – i.e. funding target for 2010 – 2011)* |
|---|---|---|---|---|---|
| 4.3.1: European wind study on the social economic value of wind energy in the EU | Approximately € 0,5 m (through IEE) | IEE topic on economic and societal value of wind power (2011 call for proposals). Budget: € 1 m | / - None | € 0,5 m | **€ 2 m** |
| *TOTAL STRAND 4* | *€ 1,5 m* | *€ 8 m* | *€ 7 m* | *€ 11,5 m* | ***€ 28 m*** |
| **GRAND TOTAL 2011 EWI Work Programme** | **€ 613,25 m** | **€ 116,34 m**[12] | **€ 72 m**[13] | **€ 294,1 m** | **€ 1.095,69 m**[14] |

[12] This amount is considerably lower than the one set for 2010 – 2011 (i.e. for this Work Programme – see paragraph on "EWI budget") because some EU funds for this period have already been allocated and are therefore included in the "public resources already allocated" column

[13] This amount is slightly lower than originally forecasted (i.e. € 105,66 m) because of extra EU allocations included in strand 3 (Grid Integration) of the EWI – see activities 3.1.1 and 3.2.1

[14] i.e. € 573,39 m after removing EEPR funds included in this Work Programme, which is slightly lower than the indicative 2010 – 2011 funding target of this Work Programme (activities 1.2.3, 1.3.1, 2.2.1, 3.1.1 and 3.1.2 include EEPR funding)

# SECTION III: The 2011 EWI Work Programme

## Methodology

The following sections provide a detailed analysis of the different EWI activities, identify relevant budget allocations and ideal funding instruments for 2011 and explain how the 2011 EWI Work Programme matrix was developed.

Funding recommendations for EU Institutions and Member States have been developed by taking into account the following features of each EWI activity:

- The forecasted 2010 - 2011 budget: this Work Programme takes into account budget allocations for both 2010 and 2011 because there was no 2010 EWI Work Programme;
- The type of activity (R&D, demonstration or market uptake and validation);
- The level of risk;
- The added value to the EU;
- The implementation status (i.e. the financial support already provided).

All these elements have been taken from the EWI 2010 – 2012 Implementation Plan, published by the European Commission in June 2010 after the Madrid SET-Plan Conference[15].
This Work Programme should be used in combination with the EWI 2010 – 2012 Implementation Plan, which represents its starting point and rationale.

It should be noted that, according to TPWind's approach, the higher the risk or EU added value of an action and the closer it is to basic research or policy issues, the more it should receive support in the form of EU cash grants: they represent the most appropriate instrument for developing risky R&D activities and projects with an impact at European level.

On the other hand, the lower the risk or EU added value of an activity and the closer it is to the market, the more Member States and other instruments (e.g. loans and equity) should step in to provide the required financial support.

| **Type of EWI action** | High risk<br>High EU added value<br>Close to basic R&D (or policy action) | Medium risk<br>Medium EU added value | Low risk<br>Low EU added value<br>Close to market |
|---|---|---|---|
| **Suggested instrument or approach** | EU funds (possibly cash grants) | Mix of EU funds (possibly loans or equity) and Member States funds | Member States funds (possibly loans or equity) |

When reading the next sections, it should be noted that FP7 Work Programmes always concerns calls for proposals launched the previous year (e.g. the 2012 FP7 Work Programme identifies topics to be published in 2011).

Finally, it should also be noted that NER300[16] resources will not be taken into consideration in this Work Programme. As a matter of fact, NER300 calls will provide funding for demonstration projects,

[15] http://ec.europa.eu/energy/technology/initiatives/initiatives_en.htm

not for R&D actions. They should therefore be considered as complementary instruments, not directly contributing to the implementation of the EWI.

The NER300 (New Entrants Reserve 300) is a new funding scheme established by the EU ETS Directive (Emission Trading Scheme). Its aim is to allocate the equivalent of 300 m $CO_2$ allowances to projects focusing on carbon capture and storage and innovative renewables (including wind power).
Relevant resources will be spent through two calls for proposals: the first one to be published in 2010 (its budget will represent the equivalent of 200 m $CO_2$ allowances), the second one in 2012 (for the remaining 100 m $CO_2$ allowances, plus unspent resources from the first call).

NER300 calls will be particularly relevant for funding the demonstration of innovative turbines, i.e. for following-up on EWI activities 1.1.1 and 1.1.2.

[16] http://www.ner300.com

## Strand 1: New turbines and components

### Sub-programme 1: R&D programme focusing on new turbine designs, materials and components

#### *Activity 1.1.1: Large scale turbines and innovative design for reliable turbines (10 – 20 MW)*

| | |
|---|---|
| Forecasted 2010 - 2011 budget | € 80 m (€ 240 m in total – from 2010 to 2015) |
| Type of activity | R&D |
| Risk | High |
| EU added value | High |
| Implementation status | This activity already received EU support through:<br>• The FP6 UPWIND project, coordinated by Risoe/DTU (total budget € 14,5 m for 5 years, from 2006 to 2011);<br>• The 2009 FP7 Energy call (topic 2010.2.3-1: cross-sectoral approach to the development of very large offshore wind turbines). EU contribution to be defined with the support of the European Commission.<br><br>Further to that, this activity received partial support from Norwegian national funds. |
| 2011 Funding recommendation | This activity has already received substantial EU support through both the FP6 and FP7, but additional funds are needed to ensure its full implementation (a total investment of € 120 m has to be ensured between 2010 and 2012; € 80 m by 2011).<br><br>In order to fully implement activity 1.1.1, a topic focusing on new materials for large scale turbines should be included in the 2012 FP7 Energy Work Programme. Topic 2010.2.3-1 focused on components for 10 MW+ machines, but next generation turbines will also need dedicated (i.e. lighter) materials. A joint NMP – Energy call could also be taken into consideration to achieve this target. Suggested budget: € 10 m.<br><br>Further to that, additional FP7 topics will have to focus on this activity in the future in order to ensure its implementation.<br>In greater details, the following topics should be included in future EWI Work Programmes, starting from the 2012 one:<br>• Advanced aerodynamic modelling, design and testing, including flow devices for distributed aerodynamic control of very large rotor blades and aero-tools for turbines on floating structures;<br>• Sensing, algorithms and actuation in control strategies and systems.<br><br>According to TPWind information, Spain would be interested in providing additional national funding to this activity, on top of that already provided through the CENIT scheme (€ 11 m for the period 2010 – 2013). |

| | |
|---|---|
| | Norway too would be willing to invest further in this activity. However, in view of the considerable level of EU support already provided to this activity, Member States could step in as from 2012.<br><br>The industry funding target for this activity is € 42 m. |

### *Activity 1.1.2: Improved reliability of large turbines and wind farms*

| | |
|---|---|
| Forecasted 2010 - 2011 budget | € 42 m (€ 63 in total – from 2010 to 2012) |
| Type of activity | R&D |
| Risk | Medium |
| EU added value | High |
| Implementation status | This activity has already received EU support through:<br>• The 2006 FP7 Energy call (topic 2007-2.3-04: demonstration of large scale systems for on-and off-shore wind farms). Total EU contribution: € 3,4 m[17];<br>• The 2010 FP7 Energy call (topic: 2011.2.3-2: development of design tools for offshore wind farm clusters – this topic focuses also on wake effects). Total EU contribution: € 5 m (to be shared with activity 3.2.1, which focuses on virtual power plants).<br><br>Further to that, this activity received partial support from Norwegian national funds. |
| 2011 Funding recommendation | Limited EU support has been provided to this topic so far, even though reliability of turbines is becoming a very important issue to reduce the cost of wind energy and make offshore wind more competitive (maintenance has a major impact on the cost structure of an offshore wind farm).<br><br>A topic focusing on reliability of wind turbines should therefore be included in the 2012 FP7 Energy Work Programme, with a suggested budget of € 10 m.<br>In greater details, the topic should focus on reducing fatigue loads due to wake effects and assessing / improving the reliability of large turbine designs.<br><br>An additional FP7 topic should be published in the future to ensure full implementation of activity 1.1.2. In greater details, the topic should focus on smarter O&M with preventive maintenance and condition monitoring as well as on optimizing life-cycle cost.<br>This recommendation will be included in the 2012 EWI Work Programme.<br><br>According to TPWind information, Norway, Germany, the UK, Sweden, The Netherlands, Spain and Belgium could also be |

[17] Project name: NIMO – reliability, maintenance, condition monitoring; coordinator: TWI Ltd.

| | |
|---|---|
| | interested in providing funding for the development of large scale turbines (with Sweden and Belgium focusing particularly on larger and more reliable gearboxes).<br>This group of Member States could therefore contribute to the implementation of this activity by funding R&D activities focusing on improving the reliability of existing large wind turbines and components (4 – 10 MW range), which will represent the mainstream market up to 2020 (especially offshore).<br>This objective, which is particularly relevant to the implementation of the new RES Directive and of National Renewable Energy Action Plans (NREAPs), could be achieved by:<br>• Launching joint programming or calls for proposals (e.g. ERANET);<br>• Coordinating national funds by focusing them on the same priorities.<br><br>Member States investment target is € 10 m: details of budget allocations should be identified by the Wind EII Team.<br><br>The remaining € 16,1 m should be provided by the industry.<br><br>As suggested by Spain, FP7 should also provide funding for increasing the reliability of large offshore designs. This recommendation will be discussed in view of future EWI Work Programmes. |

### *Activity 1.1.3: Turbine optimisation and demonstration for complex terrains*

| | |
|---|---|
| Forecasted 2010 - 2011 budget | € 5 m (€ 10 m in total – from 2011 to 2012) |
| Type of activity | R&D |
| Risk | High |
| EU added value | High |
| Implementation status | This activity has received partial support from Swedish national funds. |
| 2011 Funding recommendation | See activity 1.1.4 |

### *Activity 1.1.4: Turbine optimisation and demonstration for extreme climates*

| | |
|---|---|
| Forecasted 2010 - 2011 budget | € 5 m (€ 10 m in total – from 2011 to 2012) |
| Type of activity | R&D |
| Risk | High |
| EU added value | High |
| Implementation status | This activity received partial support from Swedish national funds. |
| 2011 Funding recommendation | Optimisation of turbines to complex terrains (activity 1.1.3) and extreme climates is a key step to support the development of wind power, but no public support in this area has been provided so far.<br>Optimisation of turbines should be addressed by a dedicated FP7 |

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| | topic, to be included in the 2013 Energy Work Programme with a suggested budget of € 5 m. Two proposals could be support: one focusing on complex terrains and one on extreme climates.<br>This funding recommendation is therefore not relevant for this EWI Work Programme and will be included in the 2012 one.<br><br>According to information collected by TPWind, several Member States could also be interested in providing funding for optimizing wind turbines to complex terrains and extreme climates, i.e. Sweden, Finland, Austria and Spain.<br>This group of Member States could achieve this objective by:<br>• Launching joint programming or calls for proposals (e.g. ERANET);<br>• Coordinating national funds by focusing them on the same priorities.<br><br>Member States investment target is € 5 m: details of budget allocations should be identified by the Wind EII Team.<br><br>The remaining € 10 m should be covered by the industry. |

## Sub-programme 2: A network of 5 – 10 European testing facilities

### *Activity 1.2.1: Definition of methods and standards for testing large wind turbine components*

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|---|---|
| Forecasted 2010 - 2011 budget | € 10 m (allocation planned for 2010 only) |
| Type of activity | R&D |
| Risk | Medium |
| EU added value | High |
| Implementation status | This activity received partial support from Spanish, British and German national funds. |
| 2011 Funding recommendation | This activity is essential to define the specifications of new testing sites required for upscaling wind turbines. However, it was not support at EU level so far.<br>It should therefore receive funding through an ad-hoc topic of the 2012 FP7 Energy Work Programme, focusing on testing approaches to be adopted in the EU as well as on the management of risks posed by the upscaling of machines (which have a potential impact on technical failures and therefore on the cost structure of wind farms).<br>Suggested budget: € 5 m.<br><br>According to TPWind information, Spain will integrate this EU financial support with its own national resources and funding schemes.<br><br>The remaining € 5 m should be covered by the private sector |

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| | (industry and R&D community). |

### *Activity 1.2.2: Improvement of size and capabilities of system-lab testing facilities for 10 – 20 MW turbines*

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| Forecasted 2010 - 2011 budget | € 100 m (€ 150 in total – from 2010 to 2012) |
| Type of activity | Demonstration - Testing |
| Risk | Medium |
| EU added value | Medium |
| Implementation status | N.A. |
| 2011 Funding recommendation | See activity 1.2.3 |

### *Activity 1.2.3: Field testing facilities for 10 – 20 MW turbines aimed at increasing reliability*

| | |
|---|---|
| Forecasted 2010 - 2011 budget | € 100 m (€ 150 in total – from 2010 to 2012) |
| Type of activity | Demonstration - Testing |
| Risk | Medium |
| EU added value | Medium |
| Implementation status | This activity has received partial support from Danish national funds and the EEPR, which provided funding for the Aberdeen offshore wind farm. EEPR funding was directed to the development of a facility for testing multi-MW turbines with innovative structures and substructures and optimising manufacturing capacities of offshore wind energy equipment (€ 40 m). |
| 2011 Funding recommendation | Activities 1.2.2 and 1.2.3 concern the development of new lab and field testing facilities, as well as the improvement of existing ones. Ad-hoc testing facilities are essential for validating the next generation of wind turbines, which will be considerably bigger than existing ones.<br><br>Given the fact that activities 1.2.2 and 1.2.3 focus on infrastructures, their implementation should involve both the European Investment Bank and Member States (either loans or equity, through the Marguerite Fund). Suggested EIB investments (for both activity 1.2.2 and 1.2.3) are:<br>• EIB Loan: € 50 m (Individual Loans);<br>• EIB Equity: € 20 m (Marguerite Fund).<br><br>According to information collected by TPWind, several Member States could be interested in providing funding for developing new lab or field test facilities, or for reinforcing existing ones: the UK (reinforcement of NAREC), Portugal (establishment of a field test site for large scale turbines), Finland (new and existing labs), Denmark (new and existing field test sites), Austria (new labs or field test sites), Spain (reinforcement of CENER) and Germany (new and existing labs).<br>This group of Member States could achieve this objective by:<br>• Launching joint programming or calls for proposals (e.g. |

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| | ERANET);<br>• Coordinating national funds by focusing them on the same priorities;<br>• Relying on Structural Funds, which provide EU resources, managed at national level, for infrastructural investments.<br><br>Member States investment target is € 20 m: details of budget allocations should be identified by the Wind EII Team.<br><br>The remaining € 70 m should be provided by the private sector (industry and R&D community). |

## Sub-programme 3: An EU cross-industrial cooperation and demonstration programme drawing upon the know-how of other industrial sectors for mass production of wind systems

### *Activity 1.3.1: Large scale manufacturing and logistics, both size and numbers for in and out of factory and site erection*

| | |
|---|---|
| Forecasted 2010 - 2011 budget | € 200 m (€ 250 m in total – from 2010 to 2012) |
| Type of activity | Demonstration - Testing |
| Risk | Medium |
| EU added value | Medium |
| Implementation status | This activity received partial support from the EEPR, which provided funding for the mass manufacturing of existing large-scale wind turbines:<br>• Nordsee Ost wind farm: 48 6MW RePower turbines on jacket foundations - € 55 m;<br>• Borkum West wind farm: 40 5MW Multibrid turbines on tripods - € 50 m. |
| 2011 Funding recommendation | Given the fact that this activity has already received partial funding through the EEPR (€ 105 m in total), that it focuses on demonstration and infrastructural investments, and that its risk and EU added value have been classified as “medium”, its implementation should be left to Member States and the industry.<br><br>According to information collected by TPWind, some Member States could be interested in the large-scale manufacturing of wind systems (the UK, Sweden and Spain).<br>This group of Member States could achieve this objective by:<br>• Launching joint programming or calls for proposals (e.g. ERANET);<br>• Coordinating national funds by focusing them on the same priorities;<br>• Relying on Structural Funds, which provide EU resources, managed at national level, for infrastructural investments. |

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| | Investment target for Member States is € 20 m: details of budget allocations should be identified by the Wind EII Team.<br><br>The remaining € 75 m (or more) should be provided by the industry. |

## Strand 2: Offshore technology

### Sub-programme 1: Development and testing of new structures

#### *Activity 2.1.1: Deep offshore and site identification for demonstration of large-sale substructures*

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|---|---|
| Forecasted 2010 - 2011 budget | € 40 m (€ 60 m in total – from 2010 to 2012) |
| Type of activity | Demonstration - Testing |
| Risk | Low |
| EU added value | High |
| Implementation status | This activity has already received EU support through:<br>• The 2006 FP7 Energy call (topic: 2007.2.3-1: development of components and systems for turbines and wind farms). The total EU grant allocated was € 5,2 m[18];<br>• The 2008 FP7 Energy call (topics: 2009.2.9-1: deep offshore multi purpose renewable energy conversion platforms for wind/ocean energy conversion; 2009.2.9-2: coordination action on off-shore renewable energy conversion platforms). The total EU grant allocated was € 10,3 m[19];<br>• The 2010 FP7 Energy call (topic: 2011.2.3-1: demonstration of innovative offshore wind electricity generation structure). Annual EU contribution to be defined with the support of the European Commission;<br>• The 2010 FP7 Ocean of Tomorrow joint call (topic: 2011.10.1-1: multi-use offshore platforms). Annual EU contribution, to be shared with the ocean energy and shipping sectors, to be defined with the support of the European Commission.<br><br>Further to that, this activity received partial support from German and Norwegian national funds |
| 2011 Funding recommendation | This activity has already received support through the FP7 (€ 5,2m through the 2006 call; € 10,3 m through the 2008 call; approximately € 20 m through the 2010 calls). For this reason, remaining investments should be covered by the industry, which has an investment target of approximately € 11,3 m.<br><br>Further to that, an FP7 topic focusing on the development of innovative off-shore specific wind turbines (especially floating ones) should be published in the 2012 EWI Work Programme. Its budget will have to be ambitious enough to enable a real |

[18] Project name: RELIAWIND, coordinator: Gamesa, duration: 36 months (i.e. from March 2008 to February 2011).

[19] Project names: MARINA PLATFORM, coordinator: Acciona, duration: 54 months (i.e. from January 2010 to June 2014), budget: € 8,7 m; ORECCA, coordinator: Fraunhofer Institute, duration: 18 months (i.e. from March 2010 to August 2011), budget: € 1,6 m.

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| | technological breakthrough, since the development of the offshore sector represents a key priority for ensuring the ultimate success of wind power in Europe.<br>According to information collected by TPWind, some Member States could be interested in the development of new structures, especially for deep offshore applications (Italy, Portugal, The Netherlands, Spain and Germany).<br>Their contribution could therefore play a key role in ensuring the full implementation of this activity (i.e. development and test of new substructures).<br><br>Given the current level of EU funding for this task, Member States could step in as from 2012: this recommendation will therefore be included in the 2012 EWI Work Programme. |

## Sub-programme 2: Automation of substructures manufacturing

### *Activity 2.2.1: Industry-wide initiative on mass-manufacturing of substructures*

| | |
|---|---|
| Forecasted 2010 - 2011 budget | € 200 m (€ 250 m in total – from 2010 to 2012) |
| Type of activity | Market uptake - Innovation |
| Risk | Medium |
| EU added value | Medium |
| Implementation status | This activity received partial support through the EEPR, which provided funding for the mass-manufacturing of existing substructures:<br>• Bard I wind farm: 80 5MW Bard Engineering turbines on tripile foundations - € 53 m;<br>• Global Tech I wind farm: 80 5MW Multibrid turbines on gravity foundations - € 58 m;<br>• Borkum West wind farm: 40 5MW Multibrid turbines on tripods - € 42 m. |
| 2011 Funding recommendation | Given the fact that this action deals with market uptake and that it has already received substantial support through the EEPR (€ 153 m in total), remaining investments should be covered by the industry, which has an investment target of € 47 m.<br><br>According to information collected by TPWind, some Member States could be interested in the development of new structures, especially for deep offshore applications (Germany, Italy, Spain and the UK). Their contribution could play a key role in ensuring the full implementation of this activity.<br>Future investments should focus on manufacturing of new substructures, since the EEPR concerns existing designs. New substructures will be designed and tested in the framework of activity 2.1.1.<br><br>Given the current level of EU funding for this task, Member States could step in as from 2012: this recommendation will therefore |

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| | be included in the 2012 EWI Work Programme. |

## Sub-programme 3: Technology transfer from the oil & gas sector

### *Activity 2.3.1: Standards*

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| Forecasted 2010 - 2011 budget | € 3,34 m (€ 5 m in total – from 2010 to 2012) |
| Type of activity | Demonstration - Testing |
| Risk | Low |
| EU added value | High |
| Implementation status | N.A. |
| 2011 Funding recommendation | No public support for this activity was available so far. However, even if its risk is low, it will play a key role in ensuring the development of offshore wind power, since it will focus on the standardisation of safety, operation and subcontracting regulations (with the support of the oil & gas and maritime sectors).<br><br>For these reasons, an FP7 topic focusing on standardisation and ensuring a technology transfer from the oil & gas sector should be included in the 2012 Energy Work Programme, with a suggested budget of € 5 m.<br>Because of its low risk, this FP7 topic could represent an ERANET PLUS action, combining EU and national support coming from a plurality of Member States with a common objective (Norway, Italy, Germany, Portugal, The Netherlands, the UK and Sweden could be interested in investing in this activity). |

## Strand 3: Grid integration

### Sub-programme 1: Grid connection and power transmission

#### *Activity 3.1.1: Combined solutions for wind farm grid connection and interconnection of at least two Countries*

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| Forecasted 2010 - 2011 budget | € 150 m (allocation planned for 2010 only) |
| Type of activity | Demonstration - Testing |
| Risk | High |
| EU added value | High |
| Implementation status | This activity received partial support from the EEPR, which provided funding to ensure the connection of the Kriegers Flak offshore wind farm to several Member States (Sweden, Denmark and Germany - € 150 m). |
| 2011 Funding recommendation | This activity has already received substantial EU support through the EEPR. However, additional efforts are needed to develop and demonstrate coordinated solutions for design, control and protection of wind farms and offshore interconnectors.<br><br>According to TPWind's proposal on the distribution of grid tasks submitted on 18 May 2010, activity 3.1.1 should be dealt with by the European Wind Initiative only (complementary activities could be launched by the Electricity Grid EII in the fields of load frequency control and control of DC voltage).<br><br>To this purpose, a topic focusing on grid connection technologies for offshore wind farms (HVDC and HVAC) should be included in the 2012 FP7 Energy Work Programme, with a suggested budget of € 10 m. This would complement EEPR funding and ensure full implementation of activity 3.1.1.<br><br>No additional investments would be required to Member States. |

#### *Activity 3.1.2: Controllable HVDC multi-terminal offshore and onshore solutions*

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| Forecasted 2010 - 2011 budget | € 104 m (€ 190 m in total – from 2010 to 2013) |
| Type of activity | Demonstration - Testing |
| Risk | High |
| EU added value | High |
| Implementation status | This activity received partial support from the EEPR, which provided funding to the development of a multiple connection platform using HVDC VCS technology (Shetland - Scotland wind farm - € 74 m). |
| 2011 Funding recommendation | This activity has already received considerable EU support through the EEPR. However, the Shetland project does not address the compatibility between components of different suppliers. |

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| | According to TPWind's proposal on the distribution of grid tasks submitted on 18 May 2010, activity 3.1.2 should be split between the EWI and the Electricity Grid Initiative as follows:<br>• The EWI should deal with requirements for grid connection of wind plants to the meshed HVDC grid, as well as with the compatibility of DC grid components from different suppliers for large wind farm integration;<br>• The Electricity Grid EII should focus on securing design and operation of multi-terminal HVDC networks, which will be built only if grid faults can be isolated (as it is the case for AC grids). Further to that, onshore HVDC highways for super-grids should also be targeted by the Electricity Grid EII.<br><br>In order to ensure the full implementation of this activity, a topic focusing on DC grids (requirements for grid connection and compatibility of components) should be included in the 2013 FP7 Energy Work Programme. Suggested budget: € 10m.This recommendation will be included in the 2012 EWI Work Programme.<br><br>Member States should integrate this investment in order to ensure full implementation of activity 3.1.2.<br>According to TPWind's collected information, some Member States could be interested in investing in this type of grid project (Norway, Sweden, France, Finland, Belgium and Italy).<br>Member States investment target would be € 10 m and their resources should focus on the development of large meshed DC grids, especially offshore and in the North Sea.<br>Interested Member States could achieve this objective by:<br>• Launching joint programming or calls for proposals (e.g. ERANET);<br>• Coordinating national funds by focusing them on the same priorities;<br>• Relying on Structural Funds, which provide EU resources, managed at national level, for infrastructural investments.<br><br>Industry target funding for this activity is € 54 m. |

## Sub-programme 2: Secure and stable system dynamics

### *Activity 3.2.1: Wind power plants requirements and solutions to wind farms supporting the system dynamics*

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| Forecasted 2010 - 2011 budget | € 10 m (€ 30 m in total – from 2011 to 2013) |
| Type of activity | R&D |
| Risk | High |

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| EU added value | High |
| Implementation status | This activity has already received EU support through:<br>• The 2008 FP7 Energy call (topic: 2009.7.1.1: wind-grid integration - overall optimization of the electricity grid with wind and storage) – TWENTIES project (which focuses on existing technologies, while this activity concerns future tools for developing virtual power plants). Annual EU contribution: € 10,5 m, to be shared with EWI activity 3.3.1 (from 2010 to 2013). Total EU contribution: € 31,7 m;<br>• The 2010 FP7 Energy call (topic: 2011.2.3-2: development of design tools for offshore wind farm clusters – which focuses also on virtual power plants). Total EU contribution: € 5 m.<br><br>Further to that, this activity received partial support from Danish, Finnish, Swedish and Norwegian national funds |
| 2011 Funding recommendation | This activity has already received substantial EU support (€ 31,7 m through the 2008 call – to be shared with EWI activity 3.3.1; € 5 m through the 2010 call – to be shared with activity 1.1.2).<br>For this reason, remaining investments should be covered by the industry.<br><br>According to the TPWind proposal on the distribution of grid tasks submitted on 18 May, 2010, activity 3.2.1 should be split between the EWI and the Electricity Grid Initiative as follows:<br>• The EWI should deal with services required to operate virtual power plants (VPP) as conventional ones (limited ramp rates and frequency response). Topic 2011.2.3-2 focuses on VPP;<br>• The Electricity Grid EII should focus on the needs and adoption of system services (AC/DC, HV/MV grids). |

## Sub-programme 3: Balancing and market operation

### *Activity 3.3.1: Balancing technologies for large scale wind power penetration*

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| Forecasted 2010 - 2011 budget | € 0 – This activity is not relevant for 2010 / 2011<br>Total 2012 – 2014 budget: € 30 m |
| Type of activity | R&D |
| Risk | High |
| EU added value | High |
| Implementation status | This activity has already received EU support through:<br>• The 2008 FP7 Energy call (topic: 2009.7.1.1: wind-grid integration - overall optimization of the electricity grid with wind and storage) – TWENTIES project. Annual EU contribution, to be shared with EWI activity 3.2.1: € 10,5 m (from 2010 to 2013). Total EU contribution: € 31,7 m;<br>• The 2010 FP7 Energy call (topic: 2011.7.3-2: storage and |

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| | balancing variable electricity supply and demand). Annual EU contribution to be defined with the support of the European Commission.<br><br>Further to that, this activity received partial support from Danish and Swedish national funds. |
| 2011 Funding recommendation | This activity is not relevant for 2010 / 2011: its implementation should take place in the 2012 – 2014 period and will therefore be re-evaluated in the 2012 EWI Work Programme.<br><br>According to the TPWind proposal on the distribution of grid tasks submitted on 18 May, 2010, activity 3.3.1 should be split between the EWI and the Electricity Grid Initiative as follows:<br>• The EWI should deal with wind power plant capabilities (frequency and voltage control);<br>• The Electricity Grid EII should focus on other components (e.g. large-scale storage systems, increased flexibility of conventional power plants and demand side response).<br><br>According to this proposal, both FP7 topics mentioned above (i.e. 2009.7.1.1 and 2011.7.3-2) will contribute to the implementation of the Electricity Grid EII and not of the EWI (total contribution: € 31,7 m through the 2008 call; € 30 m through the 2010 call). |

### *Activity 3.3.2: Market integration*

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| Forecasted 2010 - 2011 budget | € 0 – This activity is not relevant for 2010 / 2011<br>Total 2012 – 2014 budget: € 10 m |
| Type of activity | R&D |
| Risk | Medium |
| EU added value | High |
| Implementation status | This activity has already received EU support through:<br>• The 2010 Intelligent Energy Europe (IEE) call (ALTENER component / RES section: actions supporting the integration of renewable electricity into the market and the grid, in particular by bringing forward solutions to streamline and integrate authorisation and grid connection procedures). Annual EU contribution to be defined with the support of the European Commission;<br>• The 2010 FP7 Energy call: its total contribution has to be defined with the support of the European Commission. Relevant topics are the following:<br>  ○ 2011.7.2-1: innovative tools for the future coordinated and stable operation of the pan-European electricity transmission system;<br>  ○ 2011.7.2-2: innovative strategies and tools for the reliability assessment of the pan-European electricity transmission network;<br>  ○ 2011.7.3-1: network of projects developing the future European electricity networks. |

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| | Further to that, this activity is also covered by the ENSTO-E R&D Programme, which contributes to the implementation of the Electricity Grid Initiative. |
| 2011 Funding recommendation | This activity is not relevant for 2010 / 2011: its implementation should take place in the 2012 – 2014 period and will be re-evaluated in the 2012 EWI Work Programme.<br><br>According to the TPWind proposal on the distribution of grid tasks submitted on 18 May 2010, activity 3.3.2 should be split between the EWI and the Electricity Grid Initiative as follows:<br>• The EWI should deal with short and mid term wind power forecasting tools;<br>• The Electricity Grid EII should focus on the deployment of EU wide electricity markets, on increasing their flexibility, on smoothing the variability of wind energy, on balancing area operation and on measuring the impact of wind on other actors of the electricity market (as well as on prices).<br><br>According to this proposal, all IEE and FP7 topics mentioned above will contribute to the implementation of the Electricity Grid EII and not of the EWI (total FP7 contribution in 2010: over € 20 m – to be verified with the European Commission). |

## Strand 4: Resource assessment, spatial planning and social acceptance

### Sub-programme 1: Wind resource assessment

#### *Activity 4.1.1: Data sets for new models for wind energy*

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| Forecasted 2010 - 2011 budget | € 16 m (€ 24 m in total – from 2010 to 2012) |
| Type of activity | R&D |
| Risk | High |
| EU added value | High |
| Implementation status | N.A. |
| 2011 Funding recommendation | No public support for this activity, focusing on generating data sets to evaluate and develop new models for wind energy physics, was provided so far. However, its implementation is essential in view of the publication of a new EU Wind Atlas covering all Member States.<br><br>A dedicated FP7 topic should therefore be included in the 2012 Energy Work Programme in order to provide funding for the identification of sites and measurement techniques. This topic would create the conditions for the implementation of a large-scale measurement campaign throughout the EU, which would eventually enable the development of the new Wind Atlas.<br>Suggested budget of the topic is € 5 m.<br><br>Considering the impact that this topic will have on Member States, the launch of an ERANET PLUS action (which coordinates and tops-up national funding of several countries) could represent a viable way to ensure the required funding.<br><br>According to TPWind's collected information, the following Member States could be interested in co-funding this activity: France, Finland, The Netherlands, Germany, Sweden, Norway, Spain and Italy.<br><br>Investment target for Member States is € 5 m: details of budget allocations should be identified by the Wind EII Team.<br><br>The remaining € 6 m should be provided by the industry. |

### Sub-programme 2: Development of spatial planning instruments

#### *Activity 4.2.1: Coordination process for on and offshore spatial planning*

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| Forecasted 2010 - 2011 budget | € 10 m (allocation planned for 2010 only) |
| Type of activity | Policy action |
| Risk | Medium |

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| EU added value | High |
| Implementation status | This activity has already received EU support through the 2009 Intelligent Energy Europe (IEE) call for proposal – SEANERGY 2020 project, lead by EWEA (offshore spatial planning only). Total EU contribution for 2010 and 2011: € 1 m. |
| 2011 Funding recommendation | This activity received EU support only for its offshore component. However, spatial planning is a key tool for ensuring an effective development of wind power, both on and offshore.<br>A topic aiming to integrate results of relevant EU-funded projects (e.g. WindSpeed, OffshoreGrid, WindBarriers and SEANERGY 2020) should therefore be included in the 2011 Intelligent Energy Europe (IEE) call for proposals, with a suggested budget of € 2 m. This action, which will contribute to the implementation of the new RES Directive and of Member States' NREAPs, will lead to the identification of spatial planning objectives, methodologies and tools.<br><br>Following this step, a jointly agreed EU spatial planning instrument for maritime energy activities and grid developments should be developed.<br><br>In parallel, Member States with high levels of penetration of wind power should transfer onshore spatial planning methodologies to less experienced countries.<br><br>According to TPWind's information, some Member States would be willing to invest in this type of activity, (Portugal, The Netherlands, Germany, Spain and Italy).<br><br>In order to achieve this objective, relevant Member States could establish a thematic network or launch an ERANET action.<br><br>Member States funding target is € 2 m.<br><br>Remaining investments should be covered by the industry, which in this case has a funding target of € 5 m for this topic. |

## Sub-programme 3: Public acceptance analysis

### *Activity 4.3.1: European wind study on the social economic value of wind energy in the EU*

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| Forecasted 2010 - 2011 budget | € 2 m (allocation planned for 2010 – 2011 only) |
| Type of activity | Policy action |
| Risk | High |
| EU added value | High |
| Implementation status | This activity has already received EU support through the 2010 Intelligent Energy Europe (IEE) call (ALTENER component / RES section: strategic actions to analyze and monitor policies, markets, costs and benefits of renewable electricity, possibly |

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| | extended to other renewable energy sectors where appropriate and necessary). Annual EU contribution to be defined with the support of the European Commission |
| 2011 Funding recommendation | A new IEE topic focusing on the societal and economic value of wind power should be included in the 2011 IEE call, so as to explore the benefits that it can bring in terms of employment, land value, EU competitiveness, industrial strategies and electricity prices, with projections to 2020 and 2030.<br>Suggested budget: € 1 m.<br><br>Remaining investments should be covered by the industry (€ 0,5 m). |

# SECTION IV: Conclusions and next steps

This Work Programme has been developed on the basis of the 2010 – 2012 EWI Implementation Plan and takes into account the activities and budget allocations planned for 2010 and 2011. It should be approved by the SET-Plan High Level Steering Group before the end of 2010 and be implemented in 2011.

The 2011 EWI Work Programme is not a strategic paper but an operational document, designed to help EU and national authorities to implement the European Wind Initiative in the most efficient and effective way.

In 2011, the Wind EII Team will focus on the development of the 2012 EWI Work Programme, which will also be based on the 2010 – 2012 EWI Implementation Plan.

Following this step, a new EWI Implementation Plan, covering the 2013 – 2015 period, will be created and will guide the development of post-2012 Work Programmes.

The new Implementation Plan will provide an update on the implementation of the EWI and will take into consideration the launch of the 8$^{th}$ Framework Programme (2014 – 2020) as well as the availability of new Emission Trading Scheme (ETS) funds.

Thanks to the proposed approach, the EWI will be properly implemented, EU and national authorities will tighten their cooperation and wind power will receive the support it needs to contribute to the de-carbonization of the EU economy, to its security of supply and to its economic and technological growth.