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Organisation 3E  
Presentation title Kick-off meeting: Presentation of our contribution in ENDORSE. Service W1.  
Date 13/01/2011

# ENDORSE



# OVERVIEW OF THE PRESENTATION

- Presentation of 3E
- 3E's contribution in ENDORSE Work packages:
  - Overview
  - Objectives
  - Approach
  - Innovation
  - Challenges

# Presentation of 3E

INDEPENDENCE AND RELIABILITY  
Throughout project development

## 3E has expertise...

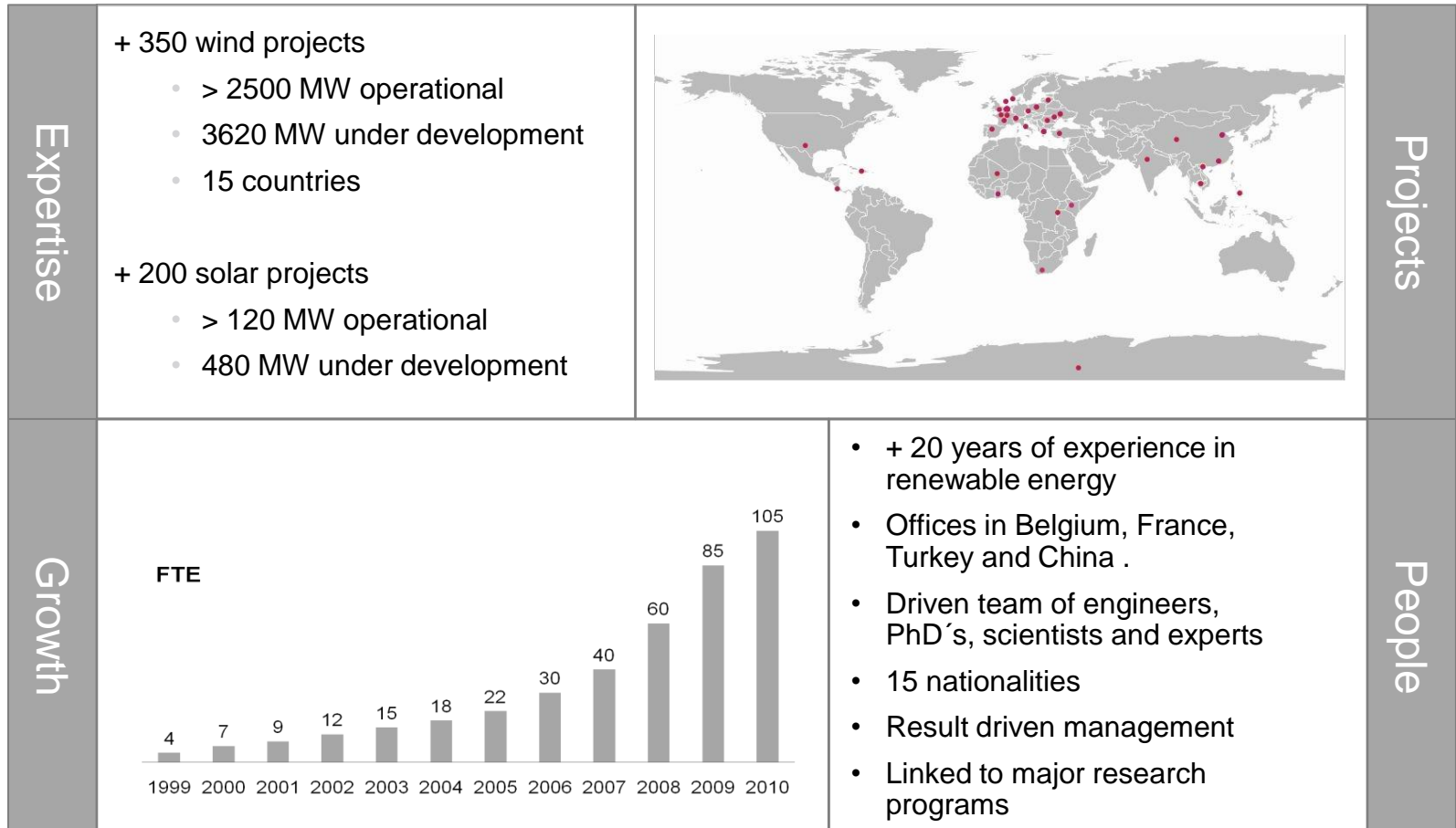
Renewable energy technology	<ul style="list-style-type: none"> <li>Solar photovoltaics (PV)</li> <li>Wind energy (on- and offshore)</li> <li>Solar heating &amp; cooling</li> <li>Bio-energy</li> <li>Small hydro</li> </ul>
Energy efficiency	<ul style="list-style-type: none"> <li>Low energy buildings</li> <li>Master planning</li> <li>Energy efficiency tools</li> </ul>
Energy Strategy	<ul style="list-style-type: none"> <li>Public policies on energy</li> <li>Corporate energy strategies</li> </ul>
Software	<ul style="list-style-type: none"> <li>Monitoring, forecasting, reporting &amp; control applications</li> <li>Software as a service model</li> <li>10 software developers (Java, .net)</li> </ul>

## ...at each phase of the project

<ul style="list-style-type: none"> <li>Constraint mapping</li> <li>Feasibility (techno-financial)</li> </ul>	Planning
<ul style="list-style-type: none"> <li>Ressource mapping (PV/wind)             <ul style="list-style-type: none"> <li>Measurement campaigns</li> <li>Site classification</li> </ul> </li> </ul>	Assessment
<ul style="list-style-type: none"> <li>Farm , grid and BOS design             <ul style="list-style-type: none"> <li>Yield assessments</li> <li>Impact and permit study</li> </ul> </li> </ul>	Design
<ul style="list-style-type: none"> <li>Due diligence             <ul style="list-style-type: none"> <li>Tendering</li> </ul> </li> <li>Bid evaluation and contracting</li> </ul>	Contracting
<ul style="list-style-type: none"> <li>Project mngt &amp; Qcontrol             <ul style="list-style-type: none"> <li>Commissionig</li> <li>Site supervision</li> </ul> </li> </ul>	Realization
<ul style="list-style-type: none"> <li>Performance monitoring</li> <li>Short term predictions             <ul style="list-style-type: none"> <li>Farm inspection</li> </ul> </li> </ul>	Operation

# Presentation of 3E

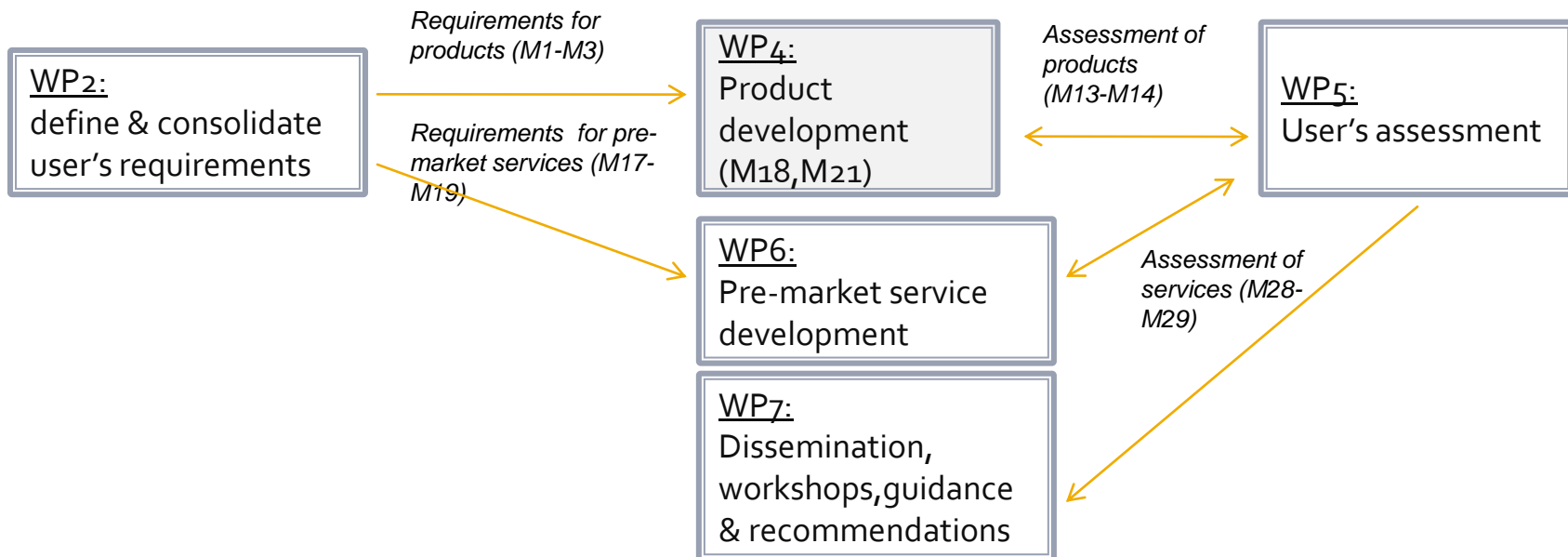
A GLOBAL PLAYER  
For sustainable energy solutions



# 3E's contribution - Overview

## Overview:

- Main contribution in WP 4020:
- Product development dedicated to the generation of annual energy output (AEO) for decision-support in on-shore wind energy policy planning and private investment.
- Links with other WP



# 3E's contribution - Objective

## WHAT

**Tool / Service**  
calculating:

- the **Annual Expected Output (AEO)** of a proposed wind park

## WHY

Resource assesment in order to:

- Assess technical and economical feasibility of wind project
- Facilitate decision-making,
- Decrease operational risk,
- Increase ROI, efficiency and predictability
- Accurate planning

## HOW

- User-friendly **access** to simulations model
- **Customized**, user-centred & **secured** easy-to-access and fast tool for decision makers and developers
- Automatic **report of reliable results**

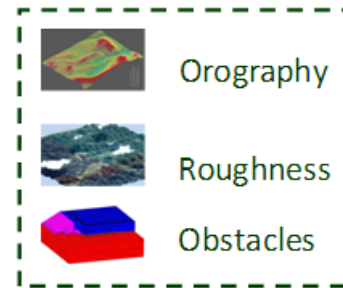
# 3E's contribution - Approach

## Task 1: Compilation of land characteristics databases

Possible data providers:

-SRTM, NGI services

-Corine Land Cover, Geoland2



## Task 2: Compilation of wind climate databases

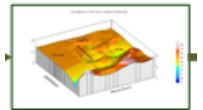
Long term wind speed and direction data

-NCEP, ECMWF,

- local meteorological stations



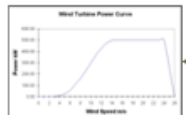
Wind Flow Model



Wake Model



Power Curve



## Task 3: Development of the data management engine

Collect, format and extract data for the computation of the AEO

## Task 4: AEO Engine

Based on users input data, WT type, number, layout etc.

**AEO is computed**

## Task 5: Product validation

Compare results with the classical way to calculate AEO or with production data of an existing wind farm

# 3E's contribution - Innovation

- 3E's expertise on the European Wind situation will help develop a tool that is more suitable for the European market and accounts for the specificities of Wind resource in Europe.
- Participation of wind projects developers allows validation of the results based on operational data at wind turbine hub height.
- Additionally, 3E will investigate options to integrate / let the user import additional layers (constraint mapping), or additional information (data from a measuring mast, operational data)



# 3E's contribution - Challenges

- Fulfill end users' requirements and expectations: format of results, results accuracy, degree of flexibility/customization (allowing input of additional information, etc.)
- Identify the adequate datasets, data resolution, data formats, models and methods that provide results in accordance to users' requirements, guaranteeing large-scale results and reasonably time consuming
- Deliver a product that meets the market's expectations

# THANK YOU for your attention !



- Quality Guarantee, 3E is certified ISO 9001:2008
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