ENERGY COOPERATION BETWEEN THE EU, THE LITTORAL STATES OF THE BLACK & CASPIAN SEAS AND THEIR NEIGHBOURING COUNTRIES

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AD-HOC TECHNICAL ASSISTANCE PROJECT

AHEF No. AZ06

Project Title

Identification of Wind Energy Potential in the Caspian Sea offshore areas of Azerbaijan

Country (s) Azerbaijan

Timescale for implementation October 2010 –September 2011

Beneficiary(s)

Ministry of Industry and Energy of Azerbaijan Republic

Main and specific objectives

- The **overall objective** of this assignment was to identify and assess the technical potential for offshore wind energy in a selected area around the Absheron Peninsula. The **specific objectives** were to **(1)** establish an overview of the wind resource in the area using existing measurements and modelling based on recalculated weather data, and to analyse available bathymetric data and identify area(s) in which an offshore wind farm can be established **(2)** to consider factors such as access to possible grid connection point, navigation restrictions, soil conditions and other interests in the area (defence, fishery, oil exploration etc.) and environmental factors which may impact the establishment of offshore wind farms, including visual impact **(3)** taking objectives (1) and (2) into consideration develop a preliminary wind farm concept (i.e. a pre-feasibility study for a single location) for one site including:
    - relevant offshore wind turbines
    - selection foundations suitable for the relevant water depth and soil conditions
    - development preliminary layout
    - description of grid connection system, subsea cabling, offshore substation (if required) for preliminary cost estimation

further to **(4)** estimate the power production potential from the wind farm and **(5)** estimate the cost of establishing the offshore wind farm.

Results achieved

Key results from the wind analysis indicated that there is considerable potential particularly north of the peninsula where average winds speeds above 8,5 m/s at 90m height can be found. The potential installed capacity sum up to 1916 MW. Assuming a feed-in tariff of 130 EURO/MWh the IRR on the investment was derived to be close to 20%. The next steps recommended are to conduct preliminary and detailed site investigations and a full feasibility study.

Useful information/ relevant documents

Further detailed information may be obtained from the representative of the beneficiary Mr. Ramiz Rzayev, Head of Investment and reconstruction of industry enterprises, Ministry of Industry and Energy of Azerbaijan Republic, e-mail: ramizrzayev@mail.ru or from project team leader Mr. Kim S. Jensen, Rambøll Denmark, e-mail kimj@ramboll.dk or

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