

WP 5 - EU-TURKEY COOPERATION CASE STUDY

WP Coordinator: TU WIEN

Involved Partners: NTUA, JR , UNDP, CIEMAT, ECN



Background-Turkey

- The electricity demand is expected to double until 2020
→ a strong demand for investments and modernization of the power system.
- Hydropower generation is similar to Sweden a very large European hydropower producer → Balancing potential for the European grid
- Turkey is likely aiming to access the European energy treaty

Aims:

- Assess the potential for the cooperation mechanisms to trigger strong investments in wind, solar, pumped hydro and other RES
- Analyse co-benefits from increased cooperation: e.g. the large hydropower capacities in Turkey providing balancing power for the fluctuating renewable energies in Europe. Potential of pump storage.
- Develop technologically economically and socially feasible pathways (including grid aspects) for RES(-E) deployment in the short (2020) to long-term (2050) w/o export perspective (to the EU).
- Practical implementation guidelines
- Stakeholder activation

5.1: Power system inventory and status of RES(-E) deployment in Turkey incl. grid situation (*Task leader: TUWIEN*)

5.1.1: Energy system characterisation and RES(-E) deployment (*ECN*)

5.1.2: Energy policy framework (*ECN*)

5.1.3: Barriers for RES(-E) market deployment (*TUWIEN, UNDP*)

5.1.4: Regional grid capacity and grade of interconnection (*NTUA, TUWIEN*)

Bilateral Meetings

- to elaborate with regional stakeholders the present problems in the Turkish power sector
- to obtain the data for the grid, the power plants, the historical load and the hydro inflow and expansion plans
- to get insight into future plans and about barriers regarding renewable electricity
- to discuss the options of article 9 with relevant ministries

5.2: Prospects for renewable energy expansion in Turkey – bottom-up assessment (*Task leader: TUWIEN*)

5.2.1: Renewable energy potentials and related costs (*TUWIEN*)

5.2.2: RES Policy targets in the short (2020) to long-term (2050) (*TUWIEN*)

5.2.3: Estimated framework development (*UNDP, TUWIEN*)

5.2.4: Electricity demand scenarios (*UNDP, TUWIEN*)

5.2.5: Technologically and economically feasible pathways for RES(-E) deployment (*TUWIEN*)

5.2.6: Environmental and Socio-economic impact assessment (*CIEMAT*)

- 5.3: Role of cooperation mechanism for RES expansion in Turkey
 - 5.3.1: Compatibility with other instruments (*JR*)
 - 5.3.2: Design of the mechanisms (*JR, TUWIEN*)
 - 5.3.3: Assessment of the possible role of the cooperation mechanism from a host country perspective (*JR, TUWIEN*).
- 5.4. SWOT Analysis: EU – Turkey assessment (*Task leader: NTUA*)
- 5.5. Preparation of a case study report on prospects for renewable energies in Turkey (*Task leader: TUWIEN*)

Regional workshop

This regional workshop is organized in month 16-18 for the dissemination and discussion of results from the case study and to increasing the awareness about investment options and to facilitate cooperation among future stakeholders.

Key outputs of WP5

- Technologically and economically feasible pathways for RES(-E) deployment in Turkey
- Identification of export potential with article 9. Assessment of the added value of international cooperation in balancing of volatile RES-E.
- Assessment of potential environmental, economic and social impacts due to intensified RES cooperation.
- Market potential and impact of new pumped hydro power plants at existing reservoirs and lakes under the condition of increased cooperation with EU
- Identification of barriers and success factors of RES cooperation. Analysis of the overlap with other financial incentives (e.g. Carbon finance).

- Practical implementation guidelines for article 9 implementation for projects in Turkey
- Stakeholder activation
- Grid infrastructure additions required w/o export or increased international balancing of volatile RES-E.

Deliverables

- D5.1.** Report on power system inventory and status of RES(-E) deployment in Turkey (month 11)

- D5.2.** Future Prospects for RES(-E) in Turkey (month 14)

- D5.3.** Case study report on prospects for RES cooperation with Turkey using the cooperation mechanisms (month 22)

Timeline

Phase / Duration of the action (in months)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
WP 5: EU-Turkey Cooperation case study																						
Task 5.1. Power system inventory and status of RES-E deployment																						
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Task 5.3. Role of cooperation mechanisms for RES expansion in Turkey																						
Task 5.4. SWOT analysis EU-Turkey assessment																						
Task 5.5. Preparation of a study report on prospects for RES in Turkey																						
Deliverables											D1			D2								D3

Risks and Contingency Plans

Model building for Turkey already started and good data availability was found.

Grid data and hourly demand data was not yet searched.

Unavailability would be no real problem

Division of responsibilities

- 5.1.1: Energy system characterisation and RES(-E) deployment (*ECN, TUWIEN*)
- 5.1.2: Energy policy framework (*ECN, TUWIEN*)
- 5.1.3: Barriers for RES(-E) market deployment (*TUWIEN, UNDP*)
- 5.1.4: Regional grid capacity and grade of interconnection (*NTUA, TUWIEN*)
- 5.2.3: Estimated framework development (*UNDP, TUWIEN*)
- 5.2.4: Electricity demand scenarios (*UNDP, TUWIEN*)
- 5.2.6: Environmental and Socio-economic impact assessment (*CIEMAT, JR*)
- 5.3: Role of cooperation mechanism for RES expansion in Turkey (*TUWIEN, JR*)
- 5.4. SWOT Analysis: EU – Turkey assessment (*Task leader: NTUA*)
- 5.5. Preparation of a case study report on prospects for renewable energies in Turkey (*Task leader: TUWIEN*)

END