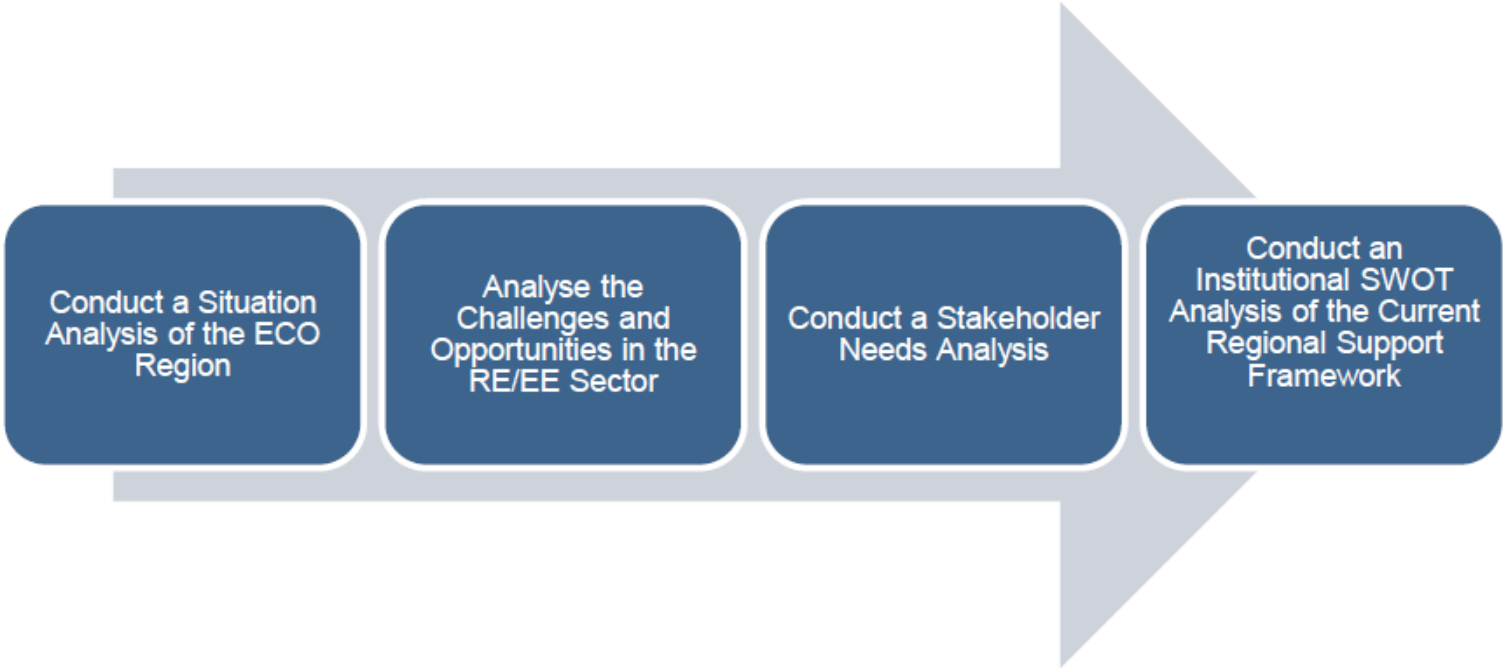
Establishment of the ECO Clean Energy Centre

Baseline and Needs Assessment

June 23, 2020

METHODOLOGY

- Supported by local consultants and stakeholders
- Field presence in all 10 countries
- Input from 71 stakeholders in all 10 countries



STAKEHOLDERS PROVIDING INPUT

Kazakhstan

Eco Energy

Samruk-Energy

Kaz Energy and Association of Renewable Energy of Kazakhstan

Afghanistan

Ministry of Economics

Ministry of Energy and Water

AKFA

D Afghan Breshna Shirkat (shirkat barq Afghinistan)

Tajikistan

Ministry of Energy and Water

Ministry of Economics

State Joint Stock Holding Company ""Barki Tajik""

Agency for Statistics under the President of Tajikistan

Academy of Sciences of the Republic of Tajikistan

Technical University M. Osimi (Faculty of Energy)

Pamir Energy Company (AKFED)

Azerbaijan

Ministry of Energy

International Academy of Eco-Energy

Cleaner Production and Energy efficiency Center

Agency for Alternative and Renewable Energy Sources

Kyrgyz Republic

OJSC Electric power plants

OJSC Chakan GES

KINETIKA LLC

Uzbekistan

Ministry of Economy and Industry

Ministry of Finance

Ministry of Agriculture

Ministry of Water Resources

Ministry of Energy of the Republic of Uzbekistan

Coordination and dispatch center (CDC)

Association of Alternative Energy

Center for energy efficiency and renewable energy sources

Mir Solar

Intelligence Dialogue

Turkmenistan

Governmental Design and Scientific Institute "Turkmensuvylimtaslama" of the Governmental Committee for Water Management

Academy of Sciences of Turkmenistan

Institute of Deserts, Nature and Wildlife

Energy Institute of the Ministry of Energy

VET Tebigi Kuvvat

Iran

Iran Wind Energy Association

Renewable energy and energy efficiency organization of Iran

Department of Environment

Iranian Fuel Conservation Company (IFCO)

SATBA

Energy Efficiency Association (SATBA and EEA Submitted one questionnaire together)

Center for Progress and Development of Iran“

Turkey

Chair of Clean Energy Association

Ministry of Energy and Natural Resources

Energy Market Regulatory Authority

Turkey Wind Energy Association

Renewable Energy Department Chair and Professor at Istanbul Technical University; Director of Energy, Environment and Economics Center at Özyeğin University

Professor at Energy Systems Engineering Department at Yıldırım Beyazıd University

Pakistan

Punjab Energy Efficiency & Conservation Agency (PEECA)

Pakistan Microfinance Investment Company Ltd. (PMIC)

World Bank - Pakistan

UNIDO - Pakistan

IFC - Pakistan

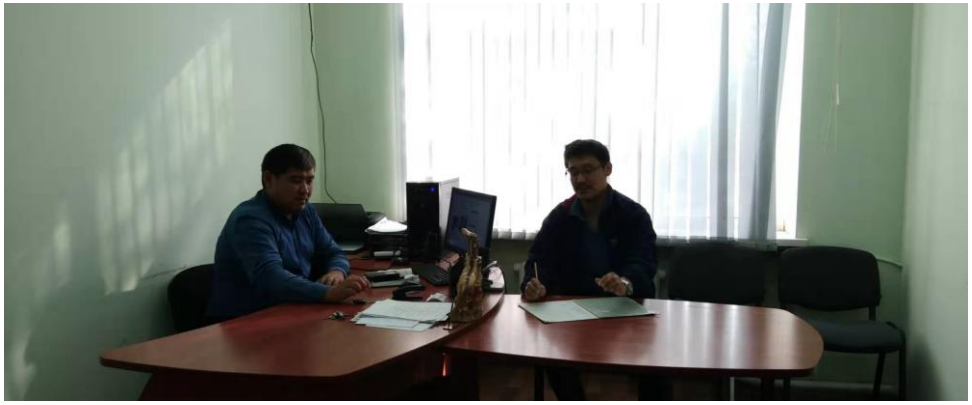
Rural Support Programmes Network (RSPN)

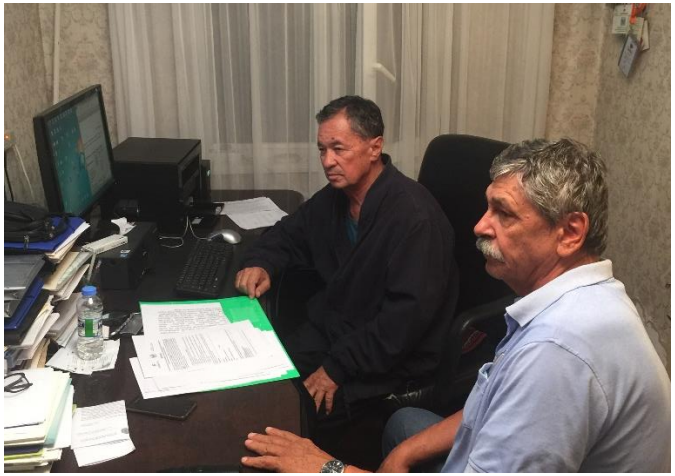
UNDP - Pakistan

National Energy Efficiency & Conservation Authority (NEECA)

Economic Cooperation Organization (ECO) Science Foundation

LOCAL CONSULTATIONS



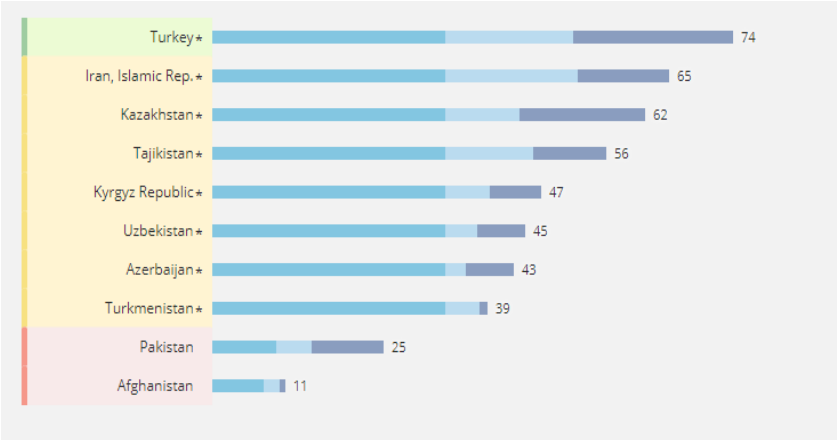


GN SEC Global Network Regional Sustainable Energy Centres

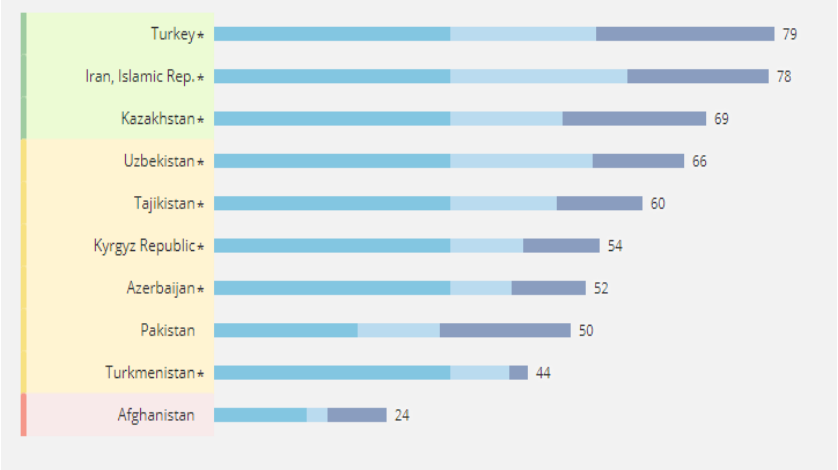
ECONOLER

REGIONAL SUCCESSES

- Growing economies and living standards
- Urban areas receive stable electricity supply
- Steadily improving efficiency of electricity generation and distribution assets
- Efficiency, renewable energy targets and policies are widespread



RISE Scores 2013



RISE Scores 2017

Global Network Regional Sustainable Energy Centres

ECONOLER

REGIONAL CHALLENGES

- Many electricity grids are old and inefficient, with high losses.
- Urbanisation and rising living standards are causing increased demand for electricity, gas, food, and water in many countries.
- Energy access in rural areas is consistently unstable despite widespread improvements in energy accessibility since 2013.
- Lack of access to electricity in rural communities significantly increases the domestic workload typically performed by women.
  - Electric cooking, dishwashing and clothes washing equipment would substantially reduce time spent on domestic work, thereby creating value and new opportunities for women.
- Water is a strategic risk across many countries to agriculture, power generation, and human use.

GENDER AND ENERGY ASSESSMENT

Methodology

Analysis Level 1: Gender Equality Situation at the Regional and National Level

Analysis Level 2: Energy Sector Level to investigate the differentiated needs of women and social dynamics within the energy sector as consumers and as actors of the energy value chain

Themes

› Women have less decision-making power

› Lower economic status prevents women from accessing clean, reliable energy sources

› Women's energy use is shaped by their domestic role

› Gender segregation of the labour market restricts women's participation in the green economy

GENDER AND ENERGY ASSESSMENT

Challenges

- Lack of energy access disproportionately impacts women
- Biomass energy reduces indoor air quality and health outcomes
- Biomass collection is a major burden on women and girls

Needs & Opportunities

- Access to affordable, clean, and reliable energy
- Cooking and heating technologies
- Higher employment of women in the RE sector higher than in the oil and gas sector
- New energy sector employment opportunities

BARRIERS AND ENABLING FACTORS

LAW AND POLICY

Barriers

- Lack of legislation and enforcement
- Insufficient regulation and customs policies
- Inconsistent implementation
- Need for EE-RE incentives
- Energy monopolies restrict private sector innovation

Enabling Factors

- Membership in regional bodies
- National EE-RE targets
- Simplified licensing for RE installations
- Legislative-regulatory policy development underway
- Support from intergovernmental orgs.

LAW AND POLICY

Barriers	How Regional Cooperation Can Help
Lack of comprehensive legislation and enforcement Inconsistent implementation and enforcement	› Build awareness and market interest › Support transition from interest to action › Share best practices
Insufficient regulation and customs policies	› Coordinate initiatives trans-regionally › Support trans-regional information sharing
Need for EE-RE incentives	› Regional sharing of best practices › Sharing of strategies to meet targets › Technical assistance and strategy support › Regional legislation development
Energy monopolies restrict private sector innovation	› Coordinate national and regional support to reduce overlap and duplication › Share regional successes and best practices across organisations › Provide regional perspectives on program design

LAW AND POLICY

Enabling Factors	How Regional Cooperation Can Help
Government interest in EE and RE	› Build awareness and market interest › Support transition from interest to action › Share best practices
Membership in important regional bodies (SPECA and CAREC)	› Coordinate initiatives trans-regionally › Support trans-regional information sharing
Targets for EE, RE, intensity reduction Licensing procedures for RE Strengthening the legislative frameworks for RE/EE	› Regional sharing of best practices › Sharing of strategies to meet targets › Technical assistance and strategy support › Regional legislation development
Intergovernmental organisations to develop and support institutional changes	› Coordinate national and regional support to reduce overlap and duplication › Share regional successes and best practices across organisations › Provide regional perspectives on program design

ECONOMIC AND FINANCIAL

Barriers

- Lack of financing mechanisms
- High cost of borrowing
- Investor uncertainty-risk
- Low electricity tariff
- High risk business environment

Enabling Factors

- Cost reduction opportunities for specific technologies
- International donor support
- Growing consumer awareness
- Reduced duties on equipment
- RE incentives

ECONOMIC AND FINANCIAL

Barriers	How Regional Cooperation Can Help
Lack of financing mechanisms	› Sharing of best practices, knowledge exchange about fund operation and setup requirements › Support to regional fund or regional technical assistance to national funds
Investor uncertainty-risk High risk business environment	› Support for regional investments that balance regional risks › Publicise investment successes › Support de-risking initiatives
High cost of borrowing Low electricity tariff	› Support regional discussions on the importance of cost recovery tariffs › Support regional sharing of profitable investment models in high-cost environments › Improve knowledge sharing about support schemes and their impacts

ECONOMIC AND FINANCIAL

Enabling Factors	How Regional Cooperation Can Help
Cost-reduction opportunities for specific technologies	› Support for cross-border trade agreements and energy exchange to support specialisation › Development and sharing of regional energy scenarios
International donor support	› Support development of regional donor projects to support national strategies › Support for regional sharing of successes › Regional point of contact for donors
Growing consumer awareness Reduced duties on equipment	› Information exchange on RE economics › Success stories and communication › Regional investor package

TECHNICAL FACTORS

Barriers

- Human resource constraints
  - Technical capacity
  - Energy auditors-managers
  - Technical, financial skills-training
- Data and information
  - EE/RE potential*
  - Testing-certification labs
- Technology standards and labelling
- Aging electrical infrastructure

Enabling Factors

- EE/RE potential mapping*
- Electric grid modernization and development
- EE building codes
- Individual national activities:
  - Standards and labelling, Pakistan
  - Feed-in-Tariff, Iran
  - RE technology manufacturing, Azerbaijan
  - High EE potential in industry, Turkey

* Information on EE/RE potential was cited as a need-barrier by some countries, and as an enabling factor by others

TECHNICAL FACTORS

Barriers	How Regional Cooperation Can Help
Human resource constraints – Technical capacity – Energy auditors-managers – Technical, financial skills-training	› Technical resource sharing › Regional scholarships › Capacity building and professional standards development
Data and information – EE/RE potential* – Testing-certification labs	› Technical support to develop RE/EE mappings › Regional technical assistance to build capacity on technical issues › Regional knowledge repositories and data sharing portals
Technology standards and labelling Aging electrical infrastructure	› Development of regional standards › Technical support to implement regional and global standards at the national level

TECHNICAL FACTORS

Enabling Factors	How Regional Cooperation Can Help
EE/RE potential mapping* Graduate-level technical training available	› Support regional gathering of available data and development of regional investment prospectus › Support regional scholarships and exchanges between schools
Electric grid modernization and development	› Support communication about important regional initiatives › Develop regional energy scenarios considering cross-border infrastructure and exchange
National efforts and success stories	› Sharing of best practices › Regional standards and labelling programmes › Support regional trade, harmonisation of codes › Support peace and good governance

REGIONAL INITIATIVE MAPPING

- Few multi-country RE/EE initiatives are occurring in the ECO region. Projects are mainly implemented in a country-by-country basis, indicating that RE/EE is not addressed under a cohesive regional approach.
- The main international donor agencies in the region are the ADB, World bank Group, UN Agencies (UNDP, UNIDO, UNECE), EBRD and the Japan International Cooperation Agency (JICA).
- The category of project most frequently implemented in the region over the past years is demand-side management (DSM) projects. This is a good tendency that should be sustained since EE and DSM measures are the most cost-effective way to enhance energy resilience and reduce GHG emissions.
- Several initiatives were indexed in policy development and financial initiatives, which is a positive development that targets challenges identified by multiple stakeholders in the region.
- There have been few decentralised RE initiatives in the region despite the energy access challenges faced by rural populations in many ECO countries..
- Ten initiatives focusing on gender equality and energy have been indexed. Four initiatives falling into other categories that include a major gender component were also counted. This shows that gender equality is a concern for ECO countries and international development partners.

SWOT ANALYSIS OUTCOMES

Strengths

- Political will
- International support

Weaknesses

- Insufficient policy-regulatory frameworks and enforcement
- Bureaucratic challenges

Opportunities

- Institutional cooperation
  - Regional standards
- Advance international commitments

Threats

- Conflict, regional instability
- Energy monopolies

DISCUSSION