UN Measures to Green the Post-pandemic Recovery in Energy
Tuesday 19 January 2021
Presentation to IBC Environment & Climate Change, Europe/CIS region
Pandemic has damaged economy of the region

- Economic activity in Europe and Central Asia (ECA) contracted 2.9 percent in 2020
- Pandemic will erase 5 years p.c. income gains in 20% of region’s economies; poverty headcount up
- Economies with strong trade/financial linkages to euro area and services/tourism hardest hit
- Pace of recovery in 2021 will depend on scale of resurgence of COVID-19, projected at 3.3 percent
All countries have launched stimulus packages

- Borrowing in debt markets up raising av. Debt levels to over 50% GDP by 2022 (up 8 points)
- Spending on health care, safety nets, support to private sector, countering financial market disruption
- Job retention schemes to mitigate 106m jobs losses in 2020, Q1-3 (in working hours)
Germany and France lead public money commitments to clean energy recovery packages in ECA, as of 13 January 2021.

Yet...the G20 share of stimulus to fossil fuels is high.

G20 has committed at least USD 424 billion to COVID-19 recovery to date.

Source: energypolicytracker.org/region/G20 13 Jan 2021
Energy transition offers huge economic opportunity

- Energy efficiency can contribute around 40% GHG reductions
- RE reduces dependence on imported fuels, fossil fuel price fluctuations
- Contributes to local air quality
- Reduces dependence on water for energy extraction/production, reducing pressure on other end-uses
- 7.7m jobs (2014), 24m jobs (2030)

Direct and Indirect Jobs from renewables, worldwide

<table>
<thead>
<tr>
<th>Year</th>
<th>Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>3</td>
</tr>
<tr>
<td>2014</td>
<td>7.7</td>
</tr>
<tr>
<td>2030</td>
<td>24</td>
</tr>
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</table>

Energy efficiency can potentially contribute almost 40% of the energy sector GHG emissions reductions required by 2050 to limit global temperature increase to 2°C.

$1 trillion is needed annually to achieve universal access to energy as per the SE4ALL objectives.

UN Regional Compendium identifies specific measures to support energy transition
Increase energy efficiency of buildings, through retrofit, insulation and energy-efficient lighting/household appliances

• Benefits: Labour-intensive, can foster local MSMEs, GHG reduction. Both implementation and effectiveness of standards measurable. Better living conditions

• Measures include (i) Legislative and regulatory framework; (ii) Effective building operation including energy audits, Buildings Certificate Programmes and access to finance for energy efficiency upgrades; (iii) Awareness raising, capacity building for construction professionals, etc.; (iv) Smart affordable technologies (insulation, smart metering, sensors, Internet of Things, innovative construction materials, etc.); (v) Dedicated loans or green credit lines by local or international banks, subsidies

• Ideally couple with RE
Support to MSMEs in delivering EE products and RE technologies

- Benefits include growth and employment, human well-being and overall welfare, reduces pollution and GHG emissions
- Business opportunities for MSMEs, as well placed in distribution, installation, O&M of technologies and equipment
- Large credit gap for MSMEs providing climate technologies identified of US$4-5 billion across developing countries due to limited financial products for greening activities
- Measures: legislation and policies for clean and green energy; apply financial incentives by reducing energy taxes or setting tax rates on sustainable investments; encourage (local) banks to expand green credit through derisking or credit enhancement; demand and supply side measures
Promote low-carbon urban transport through improved planning, improved vehicle fuel efficiency and electrification

• Measures must be tailored to specific urban contexts:
• (1) compact urban and mobility planning and reducing passenger travel demand, develop low-carbon transport strategy and integrate into city development plan
• (2) shift passenger travel mode from private vehicles towards avoidance of motorized means, including walking, cycling and expanding clean public transit
• (3) improving passenger car fuel efficiency and electrification by applying sustainable transport technologies (e.g., fuel cell buses and use of biofuels) and incentivising the electrification of passenger cars and building the necessary infrastructure
• (4) improving freight logistics (e.g., from freight to rail shift, more efficient delivery patterns, city exclusion of freight during weekend), and freight vehicle efficiency and electrification
• (5) national fiscal and regulatory measures, such as fuel tax, vehicle tax based on fuel efficiency and/or CO2 emissions, vehicle fuel efficiency regulation, road user charging, parking pricing, access restrictions and registration restrictions
UN Energy raises ambition and advocacy
Proposed UN-Energy Initiatives

What is the Ask?

▪ Dedicated commitment – up to the level of the Secretary General – to champion and drive the initiatives along with UN Energy principals
▪ Resourcing support to build out the UN-Energy secretariat to drive each of these initiatives
▪ Support from UN organizations to collectively align the UN system on the new direction
▪ New bold and ambition targets in the form of Energy Compacts

Outcome

▪ UN-Energy implements the global pledge
▪ Significantly raise the profile of SDG7, in particular through establishment of the SDG7 Leadership Group
▪ Improve the transparency of the pathway to achieving both universal access and <1.5°C temperature
▪ Public commitments from critical countries and companies, and public tracking of whether or not these entities are delivering against their commitments
▪ Unlock in-country action
<table>
<thead>
<tr>
<th>Focus Areas</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal phase out as electricity generation source</td>
<td>▪ Advocacy and thought leadership to eliminate new coal build, and systematically phase it out with cleaner sources of generation</td>
</tr>
<tr>
<td>Universal integrated energy &amp; COVID Vaccine distribution plans</td>
<td>▪ Develop standardized approach to energy planning at national level, to allow for simpler decision making by countries and private sector</td>
</tr>
<tr>
<td>Elimination of fossil fuel subsidization</td>
<td>▪ Advocacy efforts in target countries to eliminate any direct or indirect form of fossil fuel subsidy</td>
</tr>
<tr>
<td>In-country support by the UN system</td>
<td>▪ Use Energy Compacts to enable action in critical high impact countries on Energy Access and Energy Transition</td>
</tr>
</tbody>
</table>
| Climate Investment Platform                     | ▪ Launched at Climate Action Summit, 2019  
▪ Develop a clearing house to link available financing for SDG7 and climate change, with key financing needs |
## SDG7 Leadership Group

### WHAT
- 20-30 public, private, and social sector global leaders all committed to SDG7
- **Public leaders** – from countries who need to achieve AND have achieved significant impact in SDG7
- **Private leaders** – energy companies, banks, equipment providers, etc.

### WHY
- Elevate the profile of SDG7
- Ensures key energy organizations (private and social) are seen to visibly play a leading role
- Allows opportunities for the real champions to shine

### HOW
- Group constituted by invitation of UNSG
- UN-Energy to act as secretariat to the SDG7 Leadership Group
- Group to meet quarterly to:
  - Track SDG7 progress
  - Drive key SDG7 initiatives
## Energy Compacts

**WHAT**
- Countries and companies sign up to compacts committing to specific targets and initiatives for SDG7
- Compacts seen as NDC Enhancement for countries
- Targets and initiatives aligned with critical input parameters for delivering SDG7

**WHY**
- Elevate the profile of SDG7
- Apply peer pressure at both the country and the company level to take action on critical initiatives
- Allow UN-Energy to develop a perspective on pathway to achieving SDG7

**HOW**
- Build compacts around the 3 elements of SDG7, focused in particular on input metrics
- Aim to obtain 10-20 country and 10-20 company compacts by summer 2021
- Work with these vanguard countries and companies to shape what should be in compacts
- Regularly track and publish progress against compacts
Monitoring of metrics

**WHAT**
- Central and public monitoring of input and output metrics associated with SDG7
- Aggregating the various different initiatives in this space
- Ensure a minimum of annual updates, and ensure country buy-in

**WHY**
- Although high level metrics are tracked, there is limited focus on broad range of leading indicators
- There is a need to align on and establish a single source of truth
- Tracking input metrics will allow stakeholders to avoid unnecessary surprises in delivering SDG7

**HOW**
- Work in conjunction with UN DESA to ensure coordinated approach
- With broader UN-Energy agencies, define core list of input and output metrics to track
- Embed these metrics where possible in country compacts
UNDP Signature Initiatives
UNDP Energy offer: RECOVER

**Objective**

To develop policy and regulation to enable smart grids and off-grid energy solutions.

- Reallocate fossil fuel subsidies (FSS) expenditures to critical government priorities.
- Promote sustainable infrastructure investment to improve energy security/resilience: High job creation, energy and food security, sustainable fiscal revenue, contribution to NDCs, improve air quality.
- Electric mobility, smart grids & off-grid (mini-grids and SHS), Irrigation.
- To identify and seize opportunities to reform FSS (e.g. analysis, policy design, communications).
- To mainstream clean energy and sustainable transport solutions in economic stimulus packages.
- To develop policy and regulation to enable smart grids and off-grid energy solutions.
- To integrate energy in policies related to the health sector.

**Activities**

- To develop policy and regulation to enable smart grids and off-grid energy solutions.
- To mainstream clean energy and sustainable transport solutions in economic stimulus packages.
- To identify and seize opportunities to reform FSS (e.g. analysis, policy design, communications).

**UNDP Expertise**

- Vertical Funds and Resource Mobilization
- Climate Investment Platform (CIP)
- UNDP Center for Policy De-Risking (CPD) for the Energy Transition
- Health and Energy Platform of Action (HEPA)

“Recover Better” by accelerating the energy transition.
Financial De-risking

Our approach is to create investment conditions in which countries can access low-cost financing at scale with attractive risk-return.

- **Demand side (demand for capital):** Improve risk-return to lower financing cost through
  - Reducing risk
  - Transferring risk
  - Compensating for risk

- **Supply side (supply of capital):** addressing availability of capital for low carbon transition
  - Financial system reform
  - New low-cost asset classes

- **Cross-cutting**
  - Digital finance
De-risking Renewable Energy Investment

LEVELIZED COSTS OF RENEWABLE ENERGY VS FOSSIL-FUEL ENERGY
LOW FINANCING COST VS. HIGH FINANCING COST ENVIRONMENT

All assumptions (technology costs, capital structure etc.) except for financing costs are kept constant between the developed and developing country. Operating costs appear as a lower contribution to LCOE in developing countries due to discounting effects from higher financing costs.
De-risking Renewable Energy Investment
Public instrument packages

De-risking Renewable Energy Investment Kazakhstan (1): Financing cost waterfall, wind 1GW

PRE DERISKING FINANCING COST WATERFALL FOR WIND ENERGY INVESTMENTS

Cost of Equity (USD)

# De-risking Renewable Energy Investment

**Kazakhstan (2): Selecting public instruments, wind 1GW**

## PRELIMINARY FINDINGS

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Policy Derisking Instruments</th>
<th>Financial Derisking Instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power Market Risk</strong></td>
<td>• Update transparent, long-term national renewable energy strategy</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>• Establish and run IPP bidding process, with bankable PPA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Establish a renewable energy office in the regulator</td>
<td></td>
</tr>
<tr>
<td><strong>Permits Risk</strong></td>
<td>• Streamlined process for RE permits (dedicated one-stop shop)</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>• Contract enforcement and recourse mechanisms</td>
<td></td>
</tr>
<tr>
<td><strong>Social Acceptance Risk</strong></td>
<td>• Awareness-raising campaigns</td>
<td>NA</td>
</tr>
<tr>
<td><strong>Developer Risk</strong></td>
<td>• Technology R&amp;D</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>• Support for industry associations</td>
<td></td>
</tr>
<tr>
<td><strong>Grid/Transmission Risk</strong></td>
<td>• Strengthen KEGOC’s grid management capacity</td>
<td>Take-or-pay clause in PPA</td>
</tr>
<tr>
<td></td>
<td>• Transparent, up-to-date grid code</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Policy support for long-term national transmission/grid road-map</td>
<td></td>
</tr>
<tr>
<td><strong>Counterparty Risk</strong></td>
<td>• Reform and maintain creditworthy Financial Settlement Centre structure</td>
<td>Government guarantee for PPA payments</td>
</tr>
<tr>
<td></td>
<td>• Take-or-pay clause in PPA</td>
<td>Public loans to IPPs</td>
</tr>
<tr>
<td><strong>Financial Sector Risk</strong></td>
<td>• Fostering financial sector reform towards green infrastructure investment</td>
<td>Public loans to IPPs</td>
</tr>
<tr>
<td></td>
<td>• Strengthening financial sector’s familiarity with renewable energy and project finance</td>
<td></td>
</tr>
<tr>
<td><strong>Political Risk</strong></td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td><strong>Currency/ Macroeconomic Risk</strong></td>
<td>NA</td>
<td>Partial indexing of PPA tariff to hard currencies</td>
</tr>
</tbody>
</table>
De-risking Renewable Energy Investment
Kazakhstan (3): Impact of public instruments, wind 1GW

POST DERISKING FINANCING COST WATERFALL
FOR WIND ENERGY AND SOLAR PV INVESTMENTS

Cost of Equity (USD)

De-risking Renewable Energy Investment Kazakhstan (4): Levelised costs, wind 1GW

PRELIMINARY FINDINGS

LEVELISED COST OF ELECTRICITY (LCOE)

LCOE (USD cents/kWh)

<table>
<thead>
<tr>
<th></th>
<th>Baseline (unsubsidised)</th>
<th>Wind Investment BAU</th>
<th>Wind Investment Post-Derisking</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCOE</td>
<td>5.7</td>
<td>9.2</td>
<td>7.1</td>
</tr>
</tbody>
</table>


PRELIMINARY FINDINGS

Report’s 2021 (5 year) wind investment targets: 1 GW

If USD 275.6 million is invested in public derisking measures to promote wind energy in Kazakhstan, this can have the following impacts:

- **Catalysing private sector funding**
  - USD 1.6 billion in private sector investment in wind

- **Generating economy-wide savings** (over 20 year wind asset lifetime)
  - USD 804.7 million savings due to derisking (lower wind costs)
  - USD 310.6 million savings due to avoided fossil fuel subsidies

- **Better affordability for end-users**
  - Wind energy generation costs decrease from USD 9.2 cents/kWh to USD 7.1 cents/kWh

- **Benefit the environment**
  - Emission reductions of 56.3 million tCO$_2$e over 20 years

Climate Promise: Raising NDC Ambition
A Guide to Enhancing NDCs

Source: Enhancing NDCs: A Guide to Strengthening National Climate Plans, 2019, WRI and UNDP.
INTRODUCTION TO THE CIP

Background

Announced at the Climate Action Summit, Sept. 2019

Operationally launched at the beginning of 2020

Announcing partners: SEforALL, IRENA, UNDP, GCF

Learning-by-doing approach: collaborative working space
INTRODUCTION TO THE CIP

Objective

The climate finance landscape is cluttered, and many developing countries struggle to access to climate finance solutions they need.

The CIP aims to de-clutter climate finance. It plans to act as an inclusive partnership and a global public good that will provide integrated and streamlined support to developing countries and the private sector to accelerate climate investments.

The CIP’s ultimate goal is to contribute to the realization of ambitious NDCs.
INTRODUCTION TO THE CIP
3 key functions of the CIP

**Strengthening**
demand-side capacity and project pipeline

**Aligning**
the supply of climate finance

**Match-making**
seekers and providers of finance

Decluttered climate finance space

Scaled-up energy transition investments
INTRODUCTION TO THE CIP
4 tracks to deliver the energy transition

**TRACK 1**
**TARGETS**

**OBJECTIVE**
Helping countries develop ambitious clean energy goals in NDCs

**KEY ACTORS**
UNDP, IRENA, NDC Partnership, MDBs

**TRACK 2**
**POLICIES & REGULATIONS**

**OBJECTIVE**
Transparent, clear and long-term policies & regulations for clean energy investments, to attract commercial capital at scale

**KEY ACTORS**
UNDP, IRENA, MDBs, donors

**TRACK 3**
**FINANCIAL RISKING**

**OBJECTIVE**
Increased access to risk transfer instruments to ensure bankability of clean energy investments and crowd in private sector capital

**KEY ACTORS**
MDBs, IRENA, private sector, capital markets

**TRACK 4**
**MARKET PLACE**

**OBJECTIVE**
Clean energy investments, deal-making, matching project sponsors with investors

**KEY ACTORS**
All partners, MDBs, Private sector
INTRODUCTION TO THE CIP
4 tracks to deliver the energy transition

- **STRENGTHENING DEMAND-SIDE CAPACITY AND PROJECT PIPELINE:** readiness and project preparation
- **ALIGNING THE SUPPLY OF CLIMATE FINANCE:** 'one-stop-shop' features, supply alignment and harmonization
- **MATCH-MAKING SEEKERS AND PROVIDERS OF FINANCE:** clearinghouse, convening, and customized brokering

**TRACK 1**
TARGETS

**TRACK 2**
POLICIES & REGULATIONS

**TRACK 3**
FINANCIAL RISKING

**TRACK 4**
MARKET PLACE
UNDP Energy Portfolio in Europe and CIS Region
Portfolio Overview

• 9 UNDP Global Environment Facility (GEF) projects (8 ongoing, 1 in pipeline)
• 3 projects in Kazakhstan, 2 in Uzbekistan, 2 in Turkmenistan, and 1 in Tajikistan
• 1 idea for a possible Green Climate Fund (GCF) project (on sustainable transport with electric buses) in Kyrgyzstan
• Total Value of Portfolio: Approx. $38.2 million USD
• Total Value of Estimated Co-Financing: Approx. $451.3 million USD
• Leveraging Ratio: 11-1
Three ongoing projects for approx. $14 million of GEF funding for de-risking investments in renewable energy and energy-efficiency. In Kazakhstan, UNDP has worked closely with Damu Foundation to develop and launch an interest rate subsidy mechanism. UNDP is also exploring launching a green bond. Leveraging Ratio: 10-1

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Project Objective</th>
<th>Short Name</th>
<th>PIMS ID</th>
<th>Start Date</th>
<th>End Date</th>
<th>Duration (in years)</th>
<th>GEF Replenishment Period</th>
<th>Project Grant Amount (USD)</th>
<th>Co-Financing Amount (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy efficient standards, certification, and labeling for appliances and equipment in Kazakhstan - EE S&amp;L project in Kazakhstan under Global UNEP Platform</td>
<td>To transform Kazakhstan’s markets to energy efficient appliances and equipment, thereby reducing electricity consumption and avoided GHG emissions</td>
<td>EESL</td>
<td>5703</td>
<td>Aug-17</td>
<td>Aug-22</td>
<td>5</td>
<td>GEF-6</td>
<td>3,500,000.00</td>
<td>12,242,643.00</td>
</tr>
<tr>
<td>De-risking Renewable Energy Investment</td>
<td>To promote private-sector investment in large and small-scale renewable energy in order to achieve Kazakhstan’s 2030 renewable energy target</td>
<td>DREI</td>
<td>5490</td>
<td>Feb-18</td>
<td>Feb-23</td>
<td>5</td>
<td>GEF-6</td>
<td>4,510,000.00</td>
<td>51,010,000.00</td>
</tr>
<tr>
<td>Nationally Appropriate Mitigation Actions for Low-carbon Urban Development</td>
<td>To support the Government of Kazakhstan in the development and implementation of National Appropriate Mitigation Actions (NAMAs) in the urban sector to achieve voluntary national GHG emission reduction targets</td>
<td>Urban NAMA</td>
<td>4670</td>
<td>Apr-15</td>
<td>Apr-21</td>
<td>5</td>
<td>GEF-5</td>
<td>5,930,000.00</td>
<td>65,389,094.00</td>
</tr>
</tbody>
</table>
Uzbekistan

The size of the portfolio is almost $10 million. UNDP has one ongoing project on supporting the development of a market for green low cost rural housing in Uzbekistan including support for enhanced green mortgages. One new project on Supporting the development of the market for electric vehicles with a focus on electric buses in the city of Tashkent. Leveraging ratio: 17-1
The size of the portfolio is over $12 million with one project on promoting sustainable green cities focusing mainly on sustainable transport and energy efficient street lighting and a second project on energy efficiency and water management in the rural agricultural sector of Turkmenistan. Leveraging Ratio: 10-1

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Sustainable Cities in Turkmenistan: Integrated Green Urban Development in Ashgabat and Awaza</th>
<th>Sustainable Energy and Water Management Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Name</td>
<td>Green Cities</td>
<td>EE and RE in Water Sector</td>
</tr>
<tr>
<td>PIMS ID</td>
<td>5452</td>
<td>4947</td>
</tr>
<tr>
<td>Project Objective</td>
<td>To promote and implement integrated low-carbon urban systems in Ashgabat and Awaza, thereby reducing GHG emissions and creating other environmental, social, and economic development benefits</td>
<td>To provide for sufficient and environmentally sustainable water supply to support and enhance social conditions and economic livelihood of the population of Turkmenistan</td>
</tr>
<tr>
<td>Duration (in years)</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>GEF Replenishment Period</td>
<td>GEF-6</td>
<td>GEF-5</td>
</tr>
<tr>
<td>Start Date</td>
<td>Jun-18</td>
<td>Jul-15</td>
</tr>
<tr>
<td>End Date</td>
<td>Jun-24</td>
<td>Jul-21</td>
</tr>
<tr>
<td>Project Grant Amount (USD)</td>
<td>6,060,046.00</td>
<td>6,185,000.00</td>
</tr>
<tr>
<td>Co-Financing Amount (USD)</td>
<td>57,100,000.00</td>
<td>72,100,000.00</td>
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</table>
The size of the portfolio is approx. $2.5 million USD and there is one ongoing project to support SMEs (small and medium sized enterprises) and MFIs (microfinance institutions) with investment in small scale renewable energy technologies in remote rural areas of Tajikistan. Leveraging Ratio: 9-1