



Low-Carbon Energy Access Co-benefits



Agenda

- Objectives and Synergies with Larger Frameworks
- Approach and Activities
- Building on Climate Change Portfolio:
 - Demonstrations
 - Innovative community solutions
 - Measuring co-benefits
 - Scaling up through larger frameworks and partnerships
- New Concepts
- Indicators rationale
- Proposed results framework



Objectives

- Contribute to satisfying global demand for energy services for people without access to electricity and those that still rely on traditional biomass for cooking.
- Provide bottom-up energy solutions that are low-cost and provide high potential for carbon emissions reductions addressing energy service needs of rural, urban and remote communities and entrepreneurs not served by centralized systems.

Synergies with larger frameworks

- SGP will contribute to GEF climate change objectives, which include “support for energy access initiatives at the local level” and UNDP Strategic Plan (clusters B and C).
- SGP will align its efforts with the larger framework of Sustainable Energy for All (SE4ALL) to facilitate mainstreaming and scaling up.
- Bottom-up solutions will be aligned with national country strategies (e.g., NAMAs, LEDS, energy access policies etc.).

Proposed Approach and Activities

- Catalytic financing for community technologies (small hydro, solar, biomass, bioenergy, efficient stoves, etc.)- innovation focus and scaling up
- Integrated approach aiming at increasing climate resilience, reducing poverty, enhancing gender equality and achieving the SDGs.
- Capacity development efforts enabling the community to develop and use innovative technologies.
- Knowledge management and systematization.

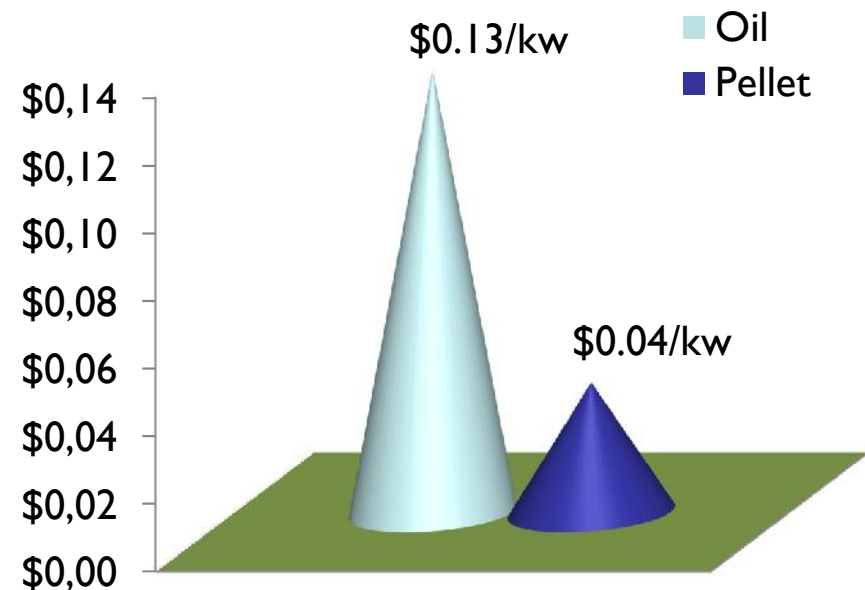
Building on SGP Climate Change Portfolio

- More than 3,000 projects (33% on renewable energy and 27% on energy efficiency) contributing to provision of sustainable energy services and reduction of harmful GHG emissions.
- Broad portfolio of innovative community technologies adapted to local conditions and implemented by grassroots and civil society organizations.
- Integrated solutions going beyond energy sector increasing resilience, reducing poverty and improving livelihoods.

Demonstrations and awareness: Albania

Retrofitting oil furnaces with pellet combustion system in schools and kindergartens in Tirana municipality

- 70 burners retrofitted from oil-to-pellet in schools and kindergartens.
- The price per kw energy from oil is 13 cent/kw while from the pellet is 4 cent /kw
- “Doing more with less” - significant savings and extended hours of heating



Price per \$/kw energy released from oil and pellet

Demonstrations and awareness: Armenia

PV and solar hot water systems and EE improvement measures in residential and non-residential buildings:

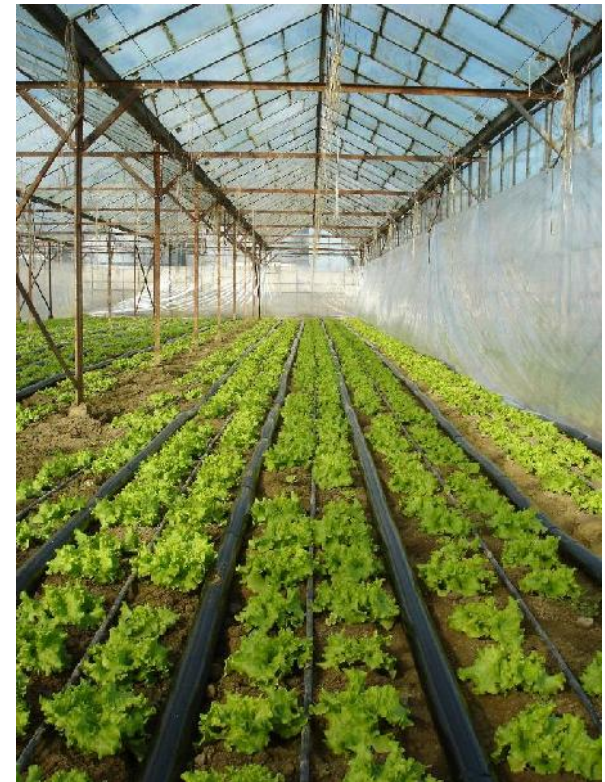
- Multi-apartment buildings, family houses;
- Medical facilities, kindergartens, sports and boarding schools, community shower and other hot water access units etc.
- Community-managed PAs and visitors/lodging centers



Innovative Community Solutions: Albania

Introduction of Olive Pomace Burners and Photovoltaic Powered Irrigation Pumps in Small Agricultural Farms

- Combined use of biomass byproduct of olive oil production for greenhouse heating and portable solar photovoltaic water pumps for irrigation.
- 3 burners and 3 solar pumps in 3 pilot farms.
- Farmers report significant savings as well as overall increased earnings.



Innovative Community Solutions: Armenia

- Traditional and innovative air convective solar driers and greenhouses;
- PV and solar hot water systems in remote pastures

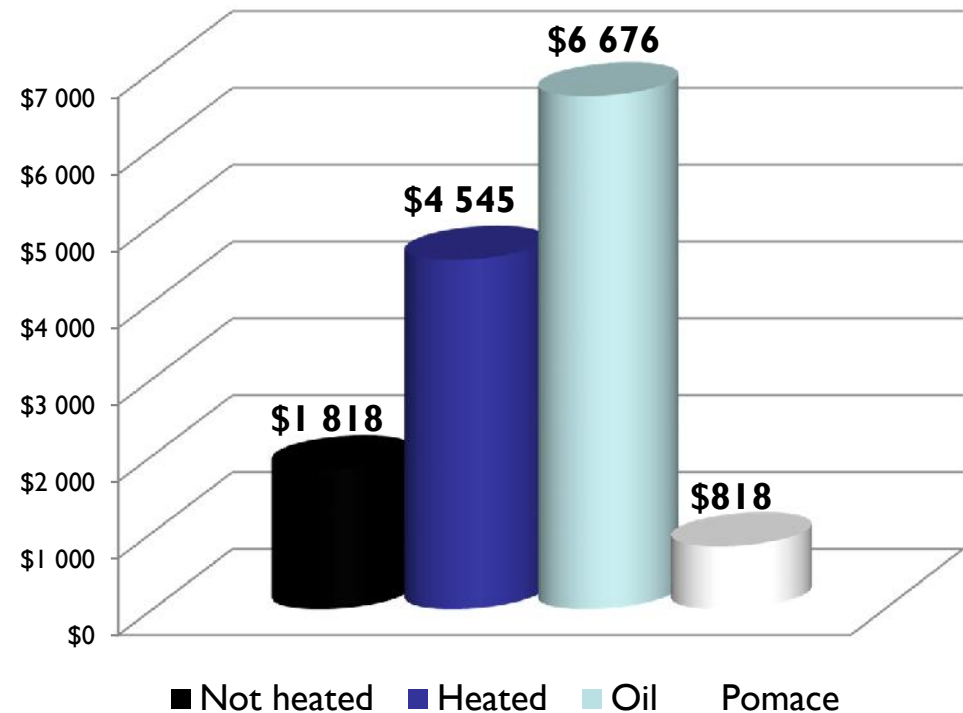


Measuring co-benefits: Albania

-CO2 reduced in 4 greenhouses - 38,880 kg.

-Cost of 500 m/t diesel for Tirana municipality - \$790,000, cost of pellets over the same period - \$388,000.

-CO2 reduced per year as a result of retrofitting 1,388 tons



Albania: Income from not-heated vs. heated greenhouse and the associated costs

Measuring co-benefits: Armenia

- Installation of 200 sq. m of solar panels and EE measures in 12 communities -106 tons of CO2 reduced annually;
- Money saved, costs reduced: \$5,000 saved annually as a result of reduced gas ($\leq 65\%$) and electricity ($\leq 60\%$) consumption;
- Improved energy security, resilience , living conditions, eco-tourism opportunities.



Scaling up and sustainability: Armenia

- 2 successful energy access demonstrations were replicated and scaled-up by businesses, individuals and other donors (OCSE, Peace Corps and others);
- 2 Labs for RE and EE technologies established in regional branches Labs for RE and EE of the State Tech University;
- 4 ventures/supply companies specializing in solar technology and EE materials and appliances established



New Concepts

- Landscape approach: energy solutions implemented within a landscape:
 - landscape selection criteria;
 - synergies and coordination with other SGP projects
- Generating and capturing co-benefits:
 - methodology of capturing social impact;
 - indicators reflecting social impact;
 - some data on all projects
 - in depth benefits accounting in selected projects.

Indicators

- Quantitative indicators used in OP5 – still needed:
 - number/type of installations;
 - number /type of beneficiaries/households.
- Global benefits - measuring CO₂ is not recommended for every project:
 - result will appear too small;
 - too technical for grantees;
 - costly expert services;
 - different approaches in countries

New Indicators

SD Impact indicators – more difficult to track:

- Measuring resilience, ecosystem effects, income, health etc. – full measurement possible only in select countries
- Qualitative and some data– most countries
- Landscape level indicators instead of project level in lead countries
- In depth data collection on country or landscape level in lead countries.

Capturing co-benefits

- Capturing Co-benefits through impact indicators and quantification:
 - challenging for every project, but every project needs to capture at least some;
 - country level and landscape level studies in selected lead countries to quantify co-benefits;
 - select portfolio studies to quantify co-benefits (OP5 and OP6);
 - additional guidance for NCs, though they are already capturing some SD indicators.

Results Framework

Project Objective: To support the creation of global environmental benefits and the safeguarding of the global environment through community and local solutions that complement and add value to national and global level action

Component	Outcome	Indicators	Target	Verification Means	Assumptions
3. Low Carbon Energy Access Co-benefits	3.1 Low carbon community energy access solutions successfully deployed in 50 countries with alignment and integration of these approaches within larger frameworks such as SE4ALL initiated in at least 12 countries	Number of typologies of community-oriented, locally adapted energy access solutions with successful demonstrations for scaling up and replication Number of households achieving energy access with locally adapted community solutions, with co-benefits estimated and valued.	At least 10 innovative typologies of locally adapted solutions demonstrated and documented At least 5,000 households achieving energy access Co-benefits such as resilience, ecosystem effects, income, health and others rigorously estimated in 12 lead countries.	AMR, country reports AMR, global database, country reports Special country studies	SE4ALL continues to develop and provide opportunities for integration 

Thank You!

