



*Empowered lives.
Resilient nations.*

*Butchaiah Gadde, Project Manager
30 August 2016
Clean Energy Solutions Centre Webinar*

EnergyPlus Guidelines: *Planning for improved energy access and productive uses of energy*



Status of Energy Access



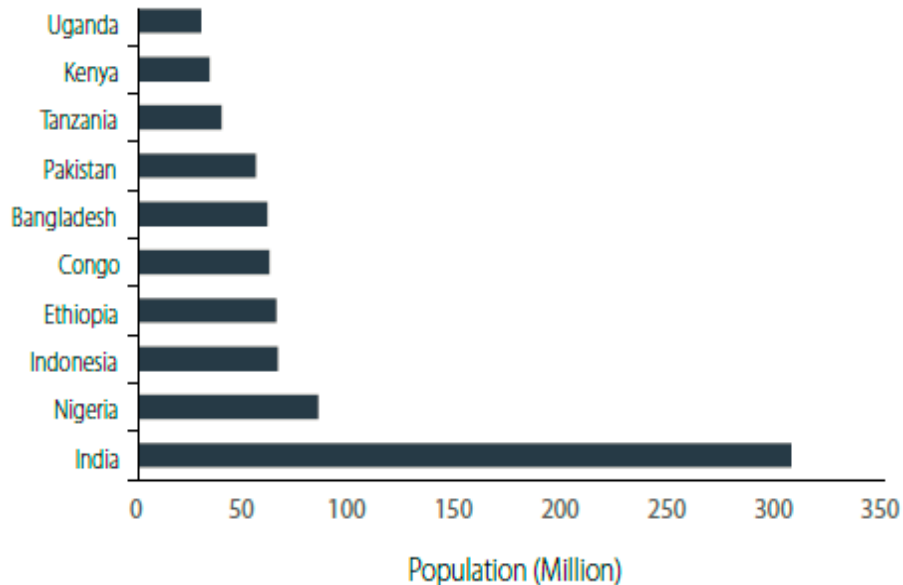
**1.1 billion
people lack access to electricity**



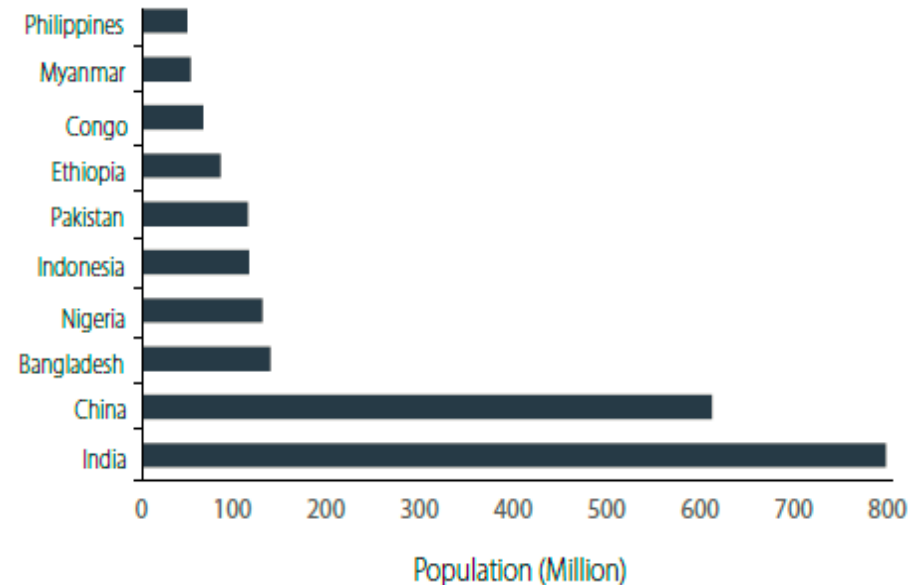
**2.9 billion
people lack access to improved
cooking facilities**

Top 10 countries...

...with people lacking access to electricity



...with people lacking access to clean cooking facilities



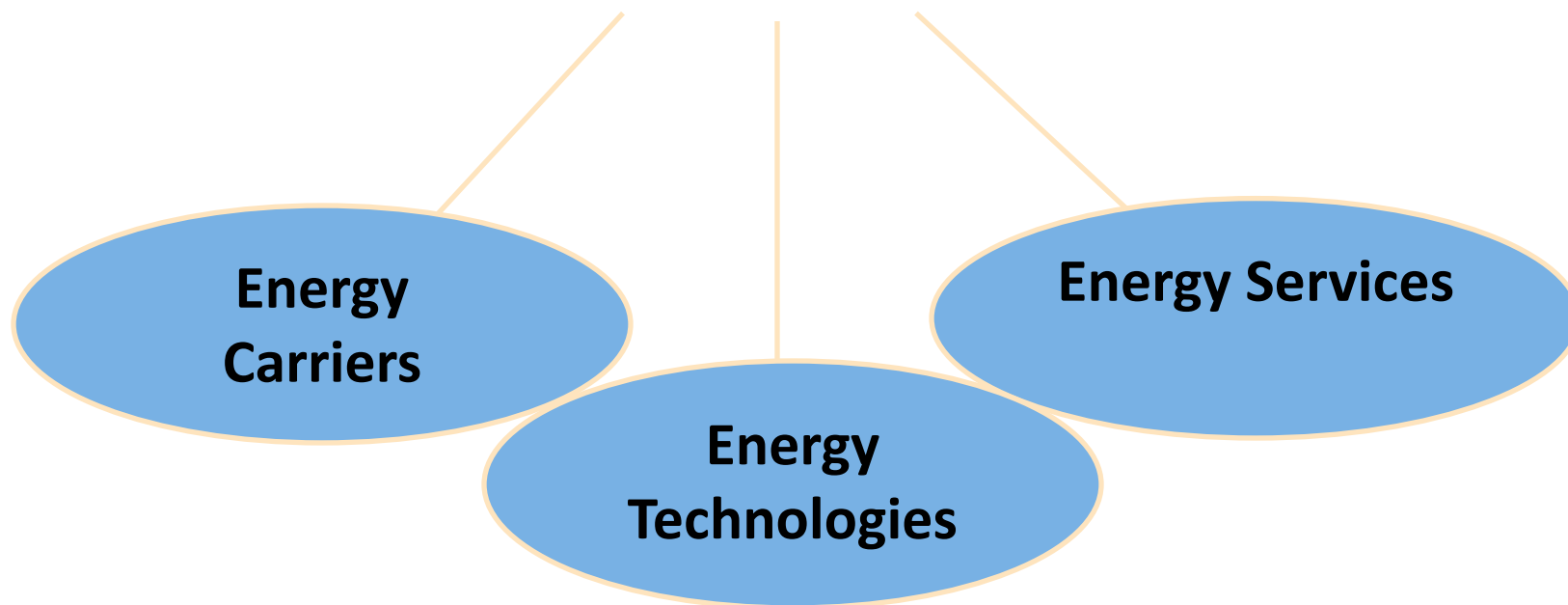
Traditional Energy Access Programmes



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Used to focus on...



Reaching Beyond Basic Energy Needs



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EnergyPlus = Energy Access + Empowerment



Interventions to:

- Expand livelihood opportunities
- Enhanced agricultural productivity
- Create employment, entrepreneurial opportunities
- Better access to education & health
- Ensure productive uses at all levels

Linkage between Energy, Human Development, and Poverty Reduction



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Education

Higher Literacy Rates



Public Spaces

Access to Information and Communication



Health Clinics

Better Community Health



Income Generation

Affordability to pay for service



Gender Equality

Empowerment of women



The EnergyPlus Guidelines of UNDP



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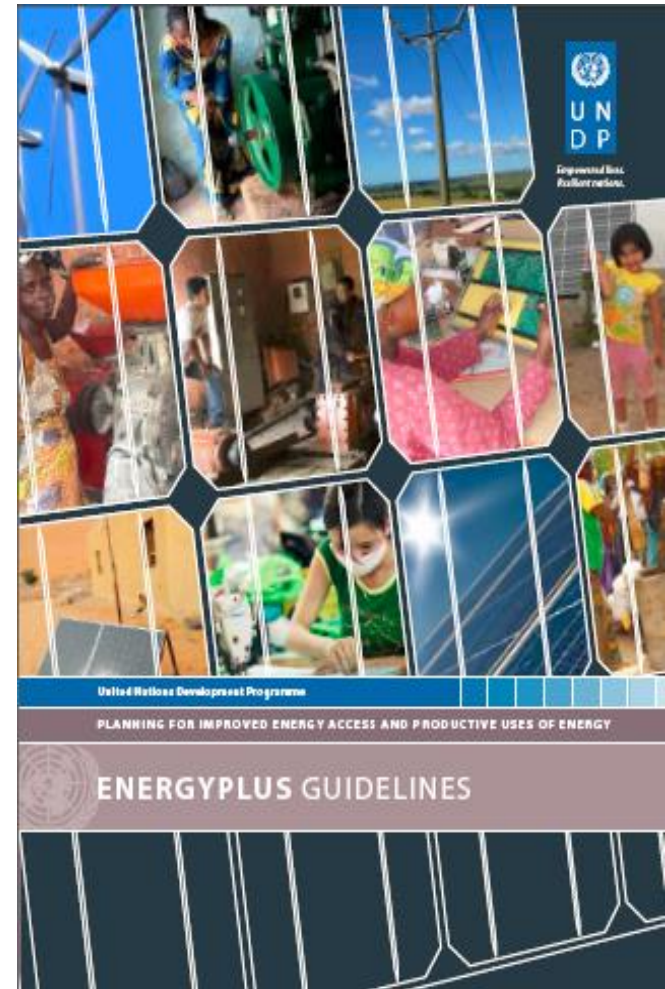
Written for:

- National/local governments
- Development Practitioners
- Civil society organizations
- Research Institutions
- Commercial Enterprises

Designed to:

- Promote improved energy access
- Provide advice on EnergyPlus programming

Based on many years of UNDP analysis & experiences



The EnergyPlus Guidelines



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Contribute to

- SDGs
- Accelerating SE4ALL
- Decade of Sustainable Energy for All (2014 to 2024)



By providing

- Overview of approaches and activities
- Advice on planning, designing and implementing
- Seven guiding components

Seven Components of EnergyPlus



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Type of capacity / Level of stakeholders	Informed planning and decision making	Driving change through leadership	Stimulating markets and investment
National government and industry stakeholders	Component 1: Monitoring energy poverty – The baseline and tracking progress	Component 2: Institutions and coordination of energy access	Component 3: Public finance and market incentives
Local governments, energy producers, suppliers, users and CSOs	Component 4: Energy resource availability and forecasting demand	Component 5: Initiating productive energy uses	Component 6: Facilitating energy production and services
	Component 7: Scaling-up successes		

Energy Access projects that integrated Seven Components of EnergyPlus



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- Renewable Energy for Rural Livelihoods (RERL) in Nepal
- Promoting Sustainable Bio-energy Production from Biomass (SBEPB) in Timor-Leste
- Appropriate Mitigation Actions in the Energy Generation and End Use Sectors in Sri Lanka
- Scale Up of Access to Clean Energy for Rural Productive Uses in India (India GEF ACE Project)
- Sustainable Energy Solutions Project in DPR Korea



Capturing the
Baseline

Institutional
Arrangements

Financial
Support and
Market
Incentives

Resource and
Demand
Mapping

Productive-
use
Interventions
and Initiatives

Energy
Production
and
Distribution

Scaling-up
Successful
Projects

Renewable Energy for Rural Livelihoods (RERL) in Nepal



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Project objective: Increased utilization of renewable energy resources in rural Nepal in order to support economic, environmental, and social development of people in the rural areas and to reduce GHG emissions

Progress achieved:

- Provided technical and financial assistance to install and operate 627 electricity-based enterprises.
- Established a mini-grid synchronizing six micro hydropower plants, the first of its kind in Nepal.
- Supported the Alternate Energy Promotion Centre (AEPC) and District Development Committees to operationalize District Energy and Environment Units in all 75 districts.
- Supported institutionalization of functional groups as cooperatives in 31 micro hydropower plants.
- Installed five Micro-hydro operated lift irrigation systems.
- Installed two biomass gasifiers in Sarlahi district.
- Provided micro-hydro installation training to private companies.
- Prepared a manual for micro hydro managers' training.
- Developed and updated community mobilization guidelines.



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Promoting Sustainable Bio-energy Production from Biomass (SBEPB) in Timor-Leste



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Project objective: Sustainable production and utilization of biomass resources in Timor-Leste and application of biomass energy technologies to support local economic, environmental and social development that leads to GHG mitigation



Expected results:

- Strengthen the policies, legal and institutional framework allowing for deployment of biomass energy technologies and the growth of biomass energy businesses
- Increase investments in bio-energy
- Improve visibility of proven technologies as well as the availability of financial support for rural bio-energy production and associated low-carbon technology applications
- Enhance capacities of policy makers, financial institutions, entrepreneurs, project developers, communities and end-users regarding the development of the local bio-energy technology market



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Appropriate Mitigation Actions in the Energy Generation and End Use Sectors in Sri Lanka



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Project objective: To support appropriate climate change mitigation actions in the energy generation and end-use sectors as part of the initiatives to achieve the voluntary GHG mitigation targets of Sri Lanka

Progress achieved:

- Establishment of Provincial Baselines and sub-national inventories for the Project is under progress, especially for bio-digesters, solar PV systems and high efficiency motors;
- Introduce MACC tool and ensure its completed for at least 15 pre-identified RE and EE options
- Financial Risk analysis for proposed NAMA interventions



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Scale Up of Access to Clean Energy for Rural Productive Uses (India GEF ACE Project)

Project objective: Enhancing reliable and affordable clean energy access for rural livelihoods in un-served and underserved areas

Progress achieved:

- Renewable Energy Technology Packages for Rural Livelihoods are being undertaken in 15 clusters, covering 1,500 rural household enterprises. The interventions will subsequently be replicated to cover 28,500 rural household enterprises
- **Technologies:** solar lighting systems; solar and/or biomass waste-powered micro grids for common facilities; solar irrigation pumps; improved commercial biomass cook-stoves; poultry-litter-based biogas plants; poultry-litter-based briquetting units; solar dryers for vegetables, spices and fish; solar-powered milk chillers; and cold rooms for storage of horticultural produce
- **Targeted livelihood sectors:** include poultry, fisheries, dairy, horticulture, khadi (homespun cloth) and silk weaving, bamboo, and commercial cooking (e.g. tea stalls, sweet shops and street food vendors)



Sustainable Energy Solutions Project in DPR Korea



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Project objective: Provide local rural communities with adequate, secure and reliable access to renewable energy resources, and cost-effective energy efficiency and energy conservation solutions

Expected results:

- 24,000 people benefited from renewable energy and energy efficient solutions
- Nine (09) different renewable energy technologies (RE) and efficient energy (EE) technologies implemented and sustainably operated



Progress achieved:

- Assessed baseline situation of energy management structure
- Energy Demand and Resource Assessments are being conducted in 15 villages

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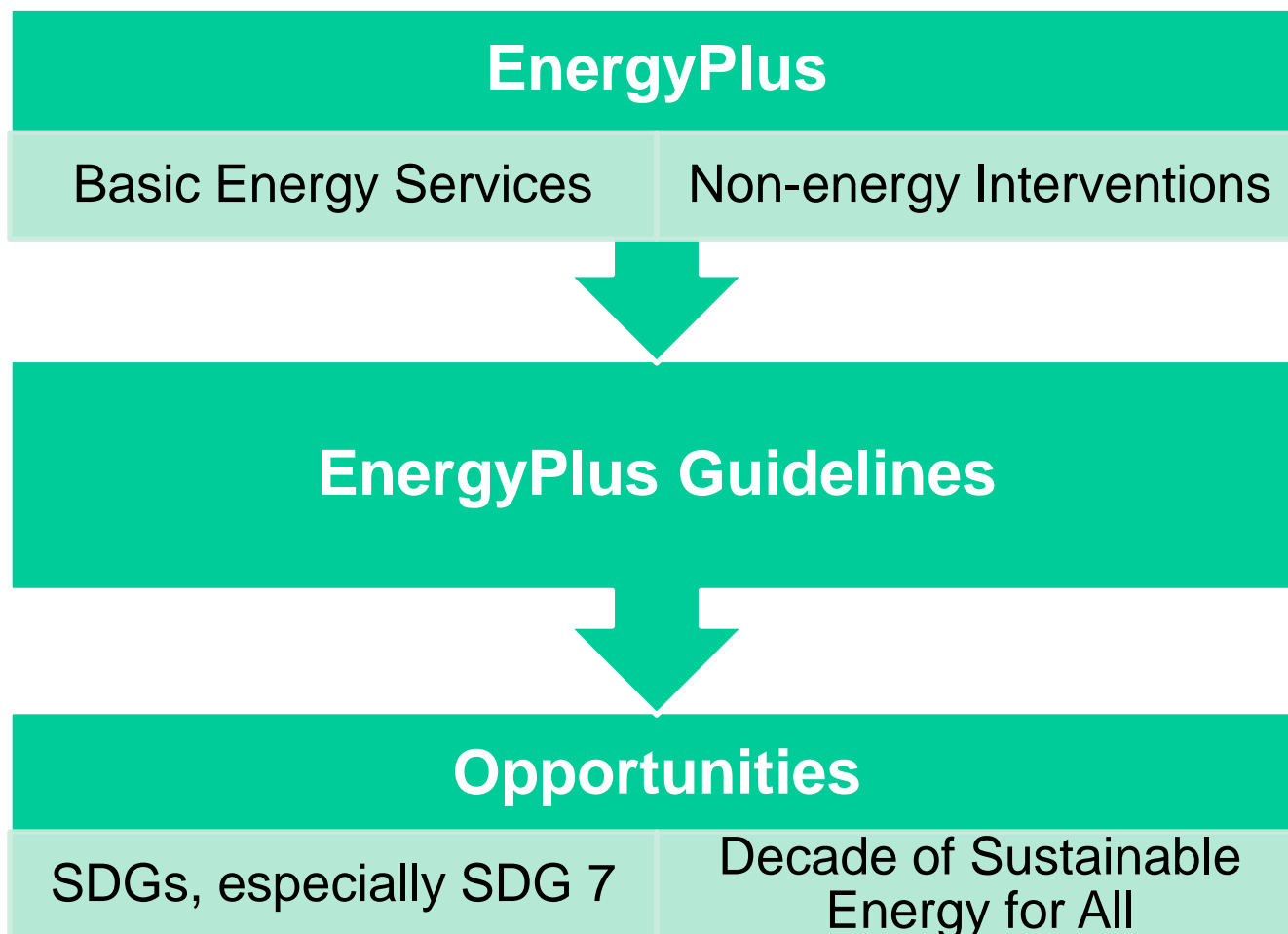
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Conclusion



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Thank You



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<http://www.undp.org/>

http://www.eurasia.undp.org/content/rbec/en/home/library/environment_energy/energyplus-guidelines.html

Component 1: Monitoring Energy Poverty - The baseline and tracking progress - Selected Resources



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- [UNDP Handbook on Planning, Monitoring and Evaluating for Development Results](#)
- [Mainstreaming Gender in Energy Projects: A Practical Handbook](#)
- [The Sustainable Energy for All Global Tracking Framework](#)
- [Monitoring the Effectiveness and Access to Energy by the Poor](#)
- [Impact Monitoring and Evaluation of Productive Electricity Use – An Implementation Guide for Project Managers](#)

Component 2: Institutions and Coordination of Energy Access - Selected Resources



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- [Energy for a Shared Development Agenda: Global Scenarios and Governance Implications](#)
- [Evaluating Renewable Energy Policy: A Review of Criteria and Indicators for Assessment](#)
- [Design and Performance of Policy Instruments to Promote the Development of Renewable Energy: Emerging Experience in Selected Developing Countries](#)
- [Technical Discussion Paper on General Energy Access in the ECOWAS Region](#)

Component 3: Public Finance and Market Incentives - Selected Resources



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- De-Risking Renewable Energy Investment
- Financing Options for Renewable Energy and Energy Efficiency

Component 4: Energy Resource Availability and Forecasting Demand - Selected Resources



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- Energy Costing Tool by UNDP
- Long range Energy Alternatives Planning system (LEAP)
- HOMER Energy
- MESSAGE-Access
- RETSCREEN 4
- TIMES/MARKAL

Component 5: Initiating Productive Energy Uses - Selected Resources



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- [Productive Use of Energy – PRODUSE: A Manual for Electrification Practitioners](#)
- [Mainstreaming Gender in Energy Projects: A Practical Handbook](#)
- [Pro-Poor Value Chain Development: Private Sector-led Innovative Practices in Ethiopia](#)
- [Impact Monitoring and Evaluation of Productive Electricity Use – An Implementation Guide for Project Managers](#)
- [Integrated Sustainable Rural Development: Renewable Energy Electrification and Rural Productivity Zones](#)

Component 6: Facilitating Energy Production and Services - Selected Resources



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- [Renting Lighting Services: Paying for the Service and Not the Hardware](#)
- [Energy to Move Rural Nepal Out of Poverty: The Rural Energy Development Programme Model in Nepal](#)
- [Power to the People: Solar Energy for a Better Quality of Life, Social Equity and Socioeconomic Growth in the Philippines](#)
- [Transforming On-grid Renewable Energy Markets](#)

Component 7: Scaling-up Successes - Selected Resources



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- [Guidance Note: Scaling up Development Programmes](#)
- [From Gap to Opportunity: Business Models for Scaling-Up Energy Access](#)
- [National Programme for Renewable Energy Sources-Based Integrated Rural Development: National Scaling-Up](#)