



Ministry of Science, Technology and Environment  
Alternative Energy Promotion Centre (AEPC)

# Quick Relief, Reconstruction and Rehabilitation Package for Earthquake Victims in Nepal



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*Kathmandu*



# Alternative Energy Promotion Centre

- Established on November 3, 1996
- Currently under the Ministry of Science, Technology and Environment
- Semi autonomous status; Board represented by public sector, private sector & financial sector
- Working as a national focal agency for alternative/ renewable energy in Nepal.
- Mandate: policy and plan formulation, resource mobilization, technical support, M&E, standardization, quality assurance & coordination
- Subsidy and financial Assistance
- Institutional and organizational strengthening of stakeholders in the renewable energy sector
- **Centre for excellence:** micro hydro, biogas



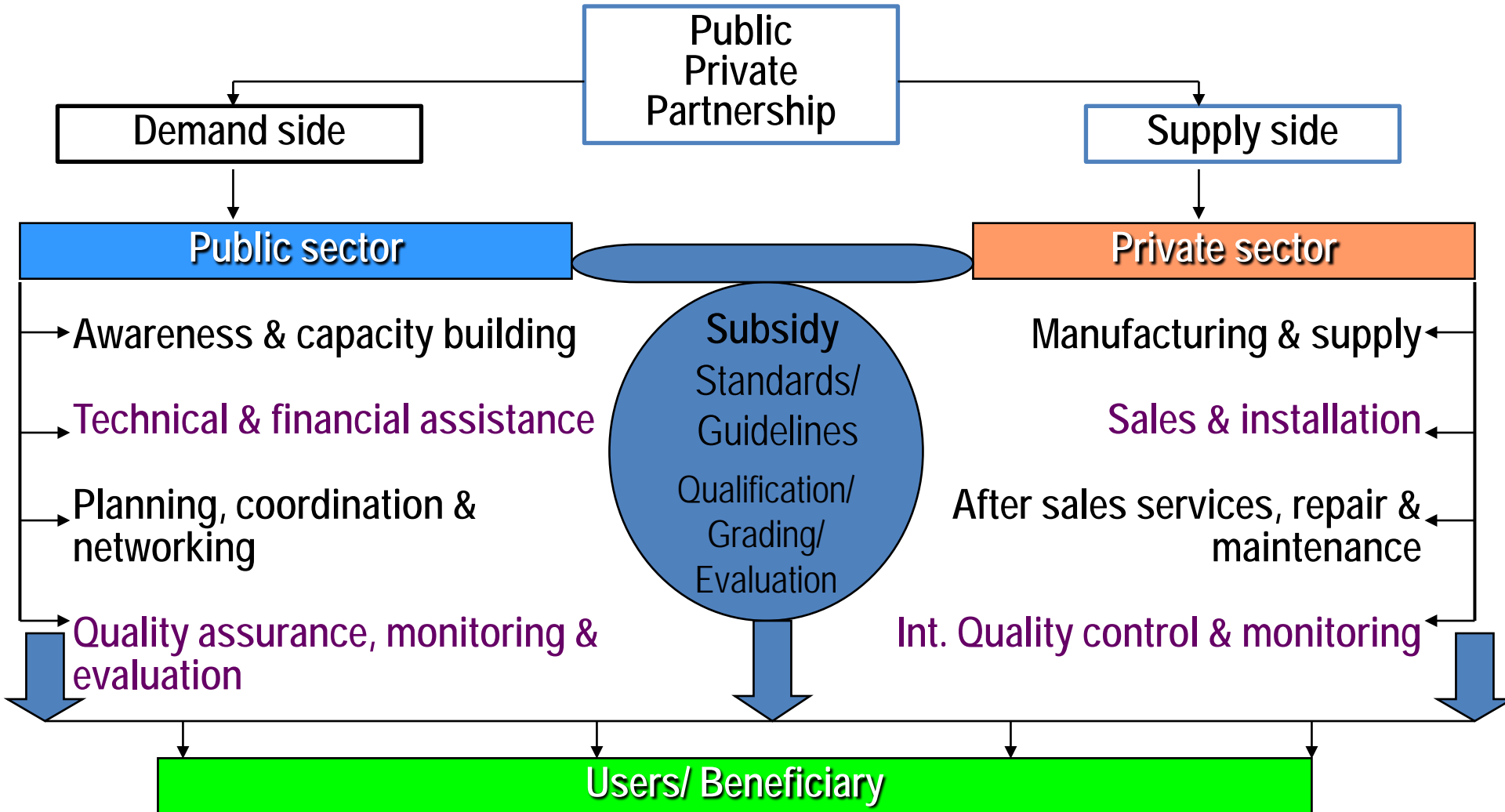
# Scope of AEPC

- Micro/mini/small hydro (up to 10 MW) & IWM
- Solar energy (PV & thermal)
- Bioenergy (Biogas, ICS, Biofuel, Briquette, Gasifiers)
- Biogas (households, community and institutional, waste to energy)
- Wind energy
- Other RETs (Geothermal)
- Climate Change





# Approach





# National Rural Renewable Energy Programme (NRREP)

- Government led single door model effective from 2012 to 2017
- Budget: 184 mill US\$ exclusive of community contributions
- Supported by various DPs

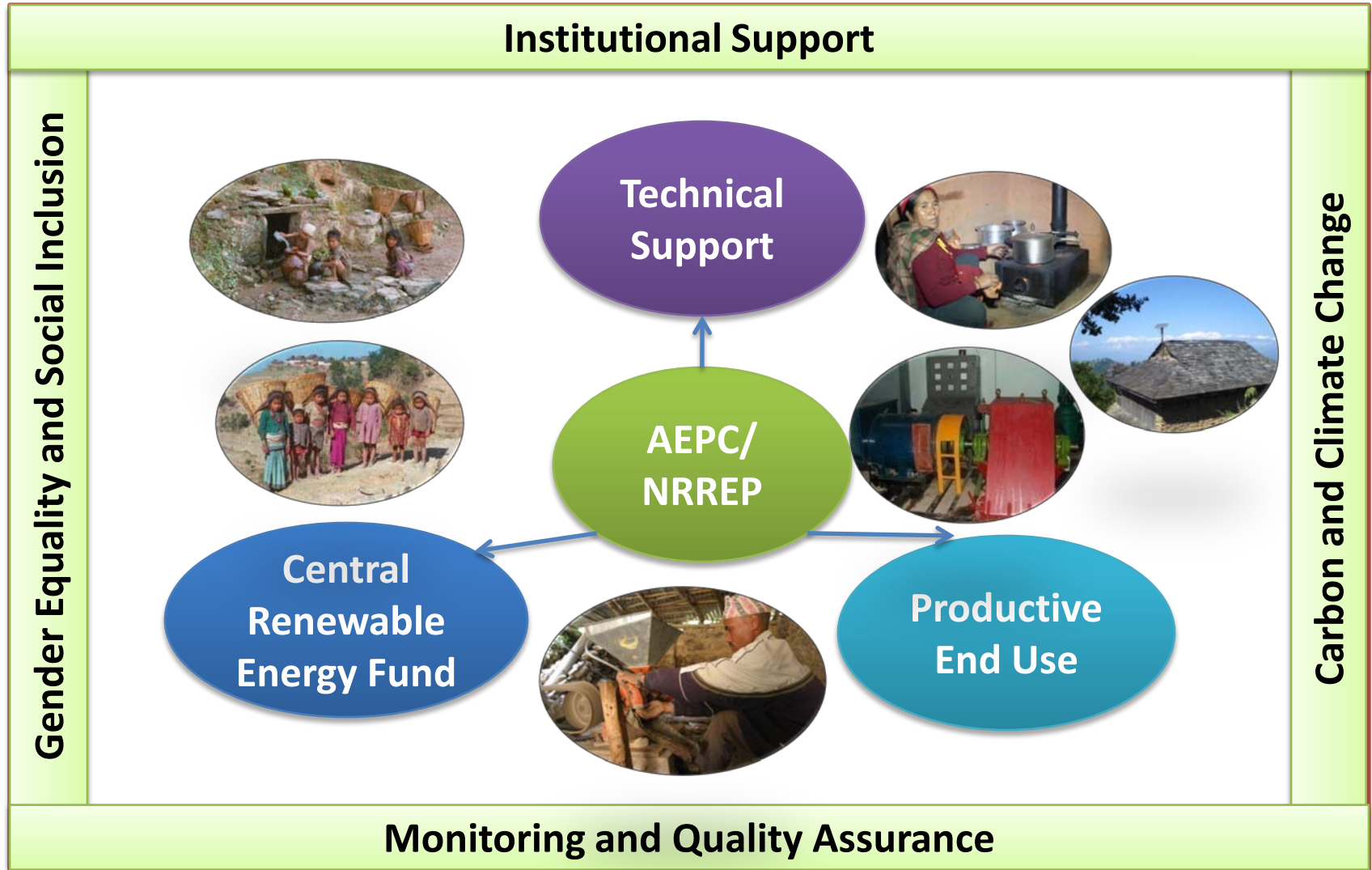


## Development Objective

To improve the living standard of rural women and men, increase employment of women and men as well as productivity, reduce dependency on traditional energy and attain sustainable development through integrating the alternative energy with the socioeconomic activities of women and men in rural communities.



# NRREP Components





# NRREP's Ambitious Targets

<b>1.</b>	<b>Mini and Micro Hydro Power</b>	<b>25,000 kW (150,000 HHs)</b>
<b>2.</b>	<b>Solar Home Systems</b>	<b>600,000</b>
<b>3.</b>	<b>Improve Cookstoves</b>	<b>475,000</b>
<b>4.</b>	<b>Household biogas systems</b>	<b>130,000</b>
<b>5.</b>	<b>New MSMEs establishment</b>	<b>1300</b>
<b>6.</b>	<b>Employment Increased by MSMEs</b>	<b>19000</b>

**GON has declared to provide Clean Cooking Solutions to All by 2017**

# The GORKHA earthquake





# Gorkha Earthquake of Nepal

- **Epicentre:** Barpak village, 40 km north-west of Kathmandu
- **Magnitude:** 7.6 Richter Scale
- **Depth:** 15 km
- **Time:** 11:56 am (NST)



The earthquake killed thousands of people and left countless others bereaved, homeless, destitute.



# National Grid for regular; Off-grid for disaster

- RE projects AEPC has been promoting intended for rural area w/o national grid
- Aftermath of April 25<sup>th</sup> Gorkha quake foisted to think such off grid systems are also very useful in urban area during natural disaster
- Immediately after quake national grid was off
- VIP areas and hospitals were supplied from grid within 9 hours
- Some parts of the capital were without electricity for 7 days
- The necessity of a small system for lighting and charging was felt



# Overview of EQ Damage

## Affected Districts

- 34 districts
- 15 are severely affected

## Damage

- Total Deaths: 8,648
- Injured: 16,808

## Households Destroyed

- Private House Fully Destroyed: **500,223**
- Private House Partially Destroyed: 269,156
- Gov. House Fully Destroyed: 978
- Gov. House Partially Destroyed: 3021



Source: [www.drrportal.gov.np](http://www.drrportal.gov.np)

RETs Installation in mostly affected districts (estimated):

Districts	Total HHs ( As per Census 2011)	Total Affected HHs	HHS connected to MHP	Total Biogas Installed	Total SHS	Total ICS & MICS	Total PVPS & ISPS
15	1,261,138	500,223	54,541	79,685	84,012	202,527	250



# Overall Damage on RE Sector

SN	RETs	Total installation (in numbers)	Damage (in numbers)	Remarks
1	Improved Cooking Stove (Mud-brick and Metal)	1 million +	140,000	Updated & expected to increase
2	Micro-hydro projects	800+	262 (91 shut down)	Data updated before 12 May 2015 and expected to increase with additional districts
3	Domestic Biogas	320,000+	16,590	
4	Solar Home Systems	600,000+	70,000	
5	PVPS	150	50	
6	ISPS	800	100	
7	MSMEs	800+	Fully damaged :18 Partially damaged : 68 Not in contact: 17	
8	IGA	3,500+	Fully damaged :453 Partially damaged : 180 Not in contact: 48	



# Intended application of Quick Relief

Description	Portable ICS	Solar Tuki (3-6 Wp)	Solar Tuki (7-10 Wp)	Mobile Charging Station 100Wp
Target beneficiary	EQ affected Households/families living in temporary settlements			
Intended application	Cooking for family	Lighting solution and mobile charging station	Lighting solution and mobile charging station	Power source for charging the mobile for communication
Benefit	Fuel saving, less smoke, time saving, safety	Lighting, security, health, smooth communication	Lighting, security, health, smooth communication	Effective communication



# Relief options & Estimated budget

HHs/ families	Technologies	Target	Unit Cost, NPR	Total cost, NPR
<u>500,000</u>	Lighting & mobile charging option (mode 1): solar tuki (3-6 Wp) for HHs who are within the reach of grid (60%)	300,000	3,500	1,050,000,000
	Lighting & mobile charging option (mode 2): solar tuki (7-10 Wp) for HHs who are away from reach of grid (40%)	200,000	6,500	1,300,000,000
	Cooking option: metallic light-weight cookstoves with portable design for 75% of HHs using solid biomass as per Census 2011 plus another 10% (assumed) who might have their regular cooking devices not working	425,000	5,500	2,337,500,000
	Total	925,000		4,687,500,000

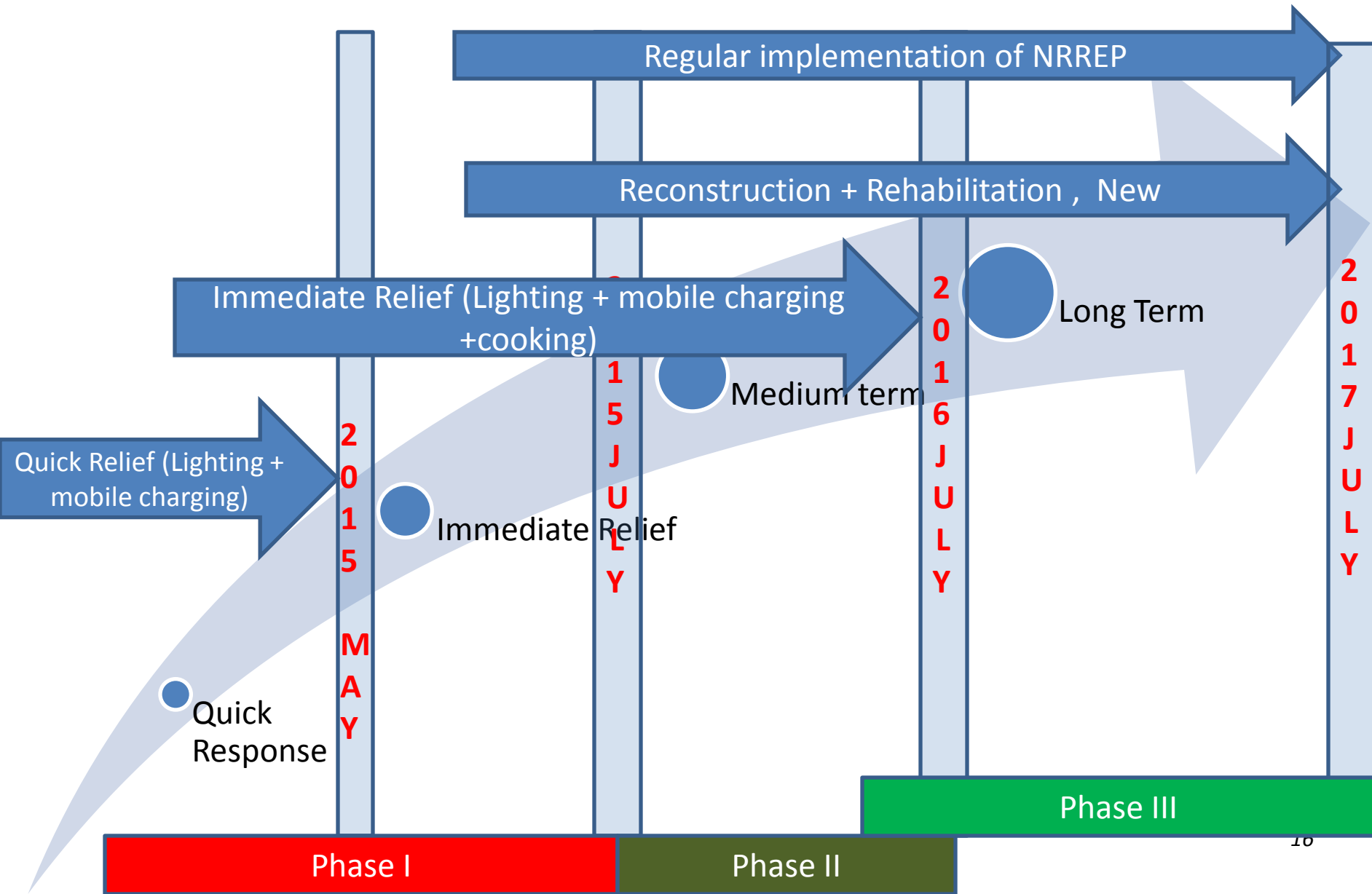


# Estimated budget for Rehab./Reconstruction

SN	RETs	Damage (in numbers)	Estimated cost for Rehab./Reconstruction
1	Improved Cooking Stove (Mud-brick and Metal)	140,000	NA
2	Micro-hydro projects	262 (91 shut down)	128 M NPR
3	Domestic Biogas	16,590	150 M NPR
4	Solar Home Systems	70,000	NA
5	PVPS	50	10 M NPR
6	ISPS	100	20 M NPR
7	MSMEs	Fully damaged :18 Partially damaged : 68 Not in contact: 17	NA
8	IGA	Fully damaged :453 Partially damaged : 180 Not in contact: 48	NA
		Total	318 M NPR



# AEPC Response





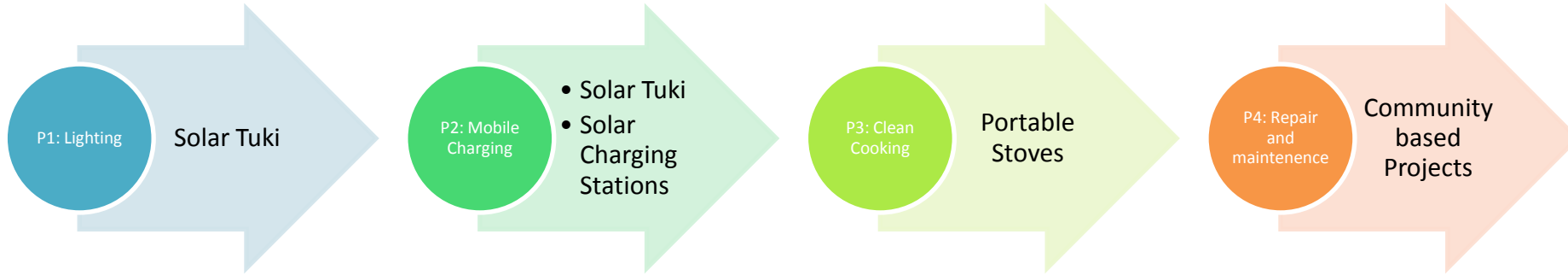


# Initiated Activities

- GoN fund mobilized to support for 12,000 HHs through quick relief (lighting & mobile charging); total budget 76.4million NPR mobilized
- RfQ call from SASEC (lighting & mobile charging for 1,500 HHs)
- As second quick relief package (13,000 with lighting solution and 10,000 clean and safe cooking solution), soon tender will be called; total budget 112 million NPR to be mobilised + GIZ
- Separate meetings with different DPs on their request
- Ongoing homework from RERL, SNV, DFID, WB, KfW
- Discussion with NPC, MoSTE and MoF
- AEPC has set up response team to plan & coordinate the efforts (NRD, RPK, KjG, MuG, SLS, LaK)



# Proposed Solution



Immediate repair of MHPs where there is possibility to reconnect to the HHs; Similar option could be for ISPS, PVPS, b biogas etc



Light: 1 to 3 for 4-5 hrs  
Mobile charging: 1  
Size: 3-10 Wp  
Price: NRs 3,000-6,500

Light: 2 to 5  
Mobile charging: 30 mobiles at a time  
Size: 100 Wp  
Price: NRs 40,000-45,000

Metallic light-weight cookstoves with portable design suitable to cook for single family  
Average Price: NRs 5,500



# Expectation from EDPs

- Raise awareness
- Well Coordination – District Disaster Relief Committee
- Information Sharing
- **Fill the gap**
- Efficient and effective implementation



Thank you!



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