

Assessment of Renewable energy choices of rural households towards achieving goals of National Renewable Energy Policy in Bangladesh

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Background

- To mitigate climate change, one of the key strategies is energy transition from traditional fossil fuels to renewable (WB, 2017)
- To keep up with this global trend, Bangladesh has set an ambitious goal of achieving of 40 GWp capacity of renewable energy by 2041 and 10% of national energy by 2021.
- According to SREDA-2022, 6023632 SHSs have already been installed and 28 solar mini-grid projects have been implemented throughout Bangladesh.

Problem Statement

- Up to 2019, IDCOL invested USD 696 million in the Solar Home Systems (SHS) program, resulting in the installation of 6,023,632 SHS with a total capacity of 262.753 MWp (IDCOL, 2019).
- Solar Home Systems (SHSs) face adoption challenges in rural areas due to energy poverty, high costs, and their inability to power AC devices, leading many to rely on traditional fuels (Saim, M.A. and Khan, I., 2021).
- The study aims to assess the alignment of policy implementation with the energy needs and practices of rural populations, addressing these barriers to SHS adoption.

Research Objective

Broad Objective

- to identify the gap between national policy goals and people's energy preference and practice.

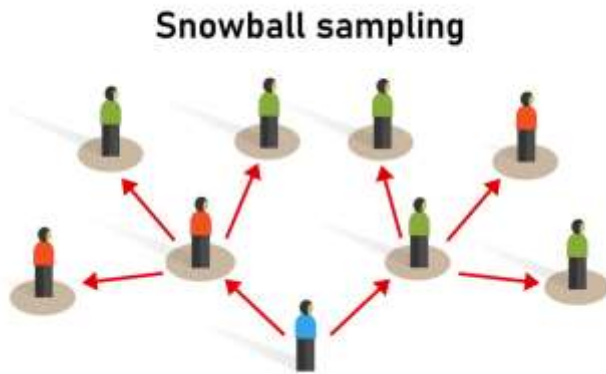
Specific objective

- To identify the challenges of SHS among the users.
- To capture the preferences and practices of users of SHS (with and without Grid connections) and Solar Mini Grid System

Research Methodology

Research design –

comparative case design 3 cases – 30 respondent...identify by snowball sampling



Sample size - 91(Thumb rule)

Off-grid SHS users – 30

SHS users in Grid connected area – 30

Solar mini grid users - 31

Research Methodology (Contd.)

- Study area

Baghaichhari,
Rangamati
(SHS users in grid
connected areas)



Daulatpur, Manikganj
(Solar mini-grid users))

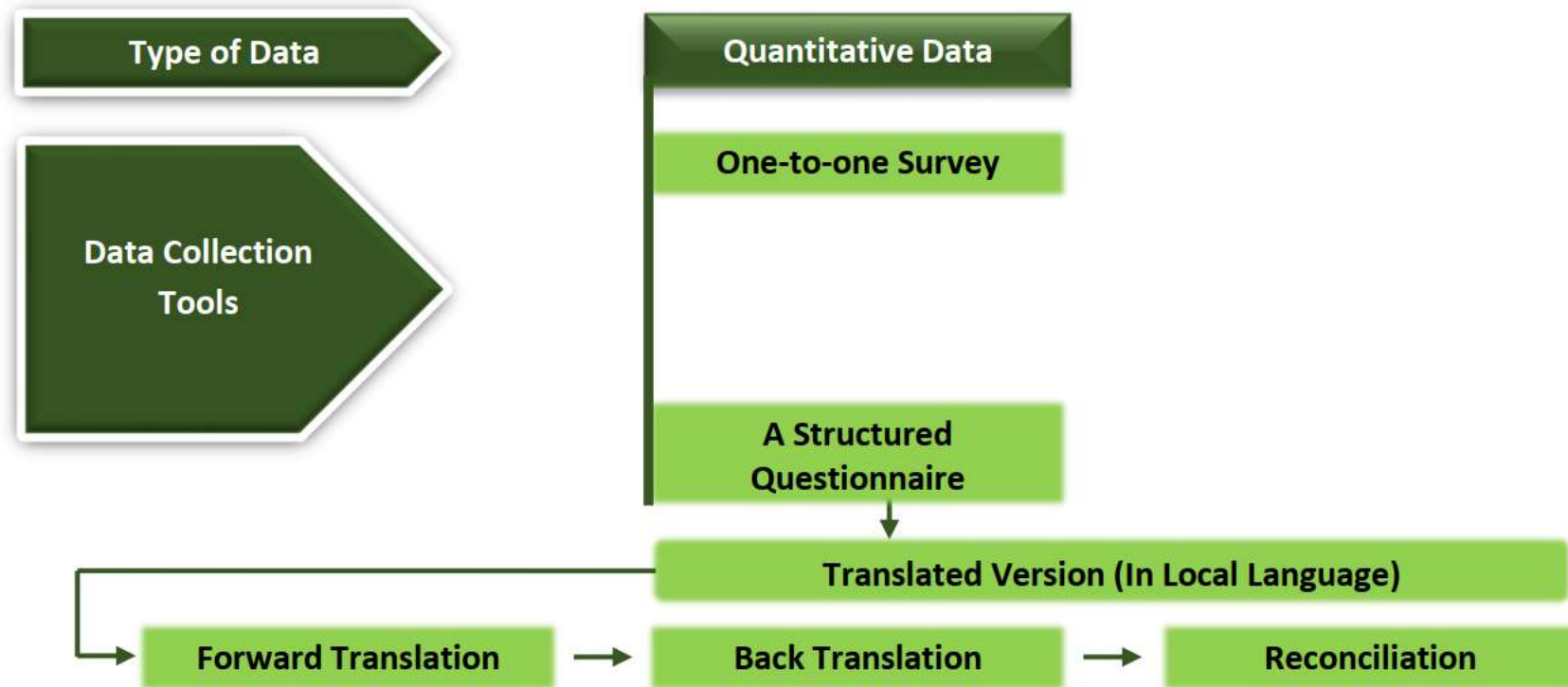
Kutubdia, Cox's Bazar
(Off-grid SHS users)



Ukhiya, Cox's Bazar
(SHS users in grid
connected areas)

Research Methodology (Contd.)

- Data collection

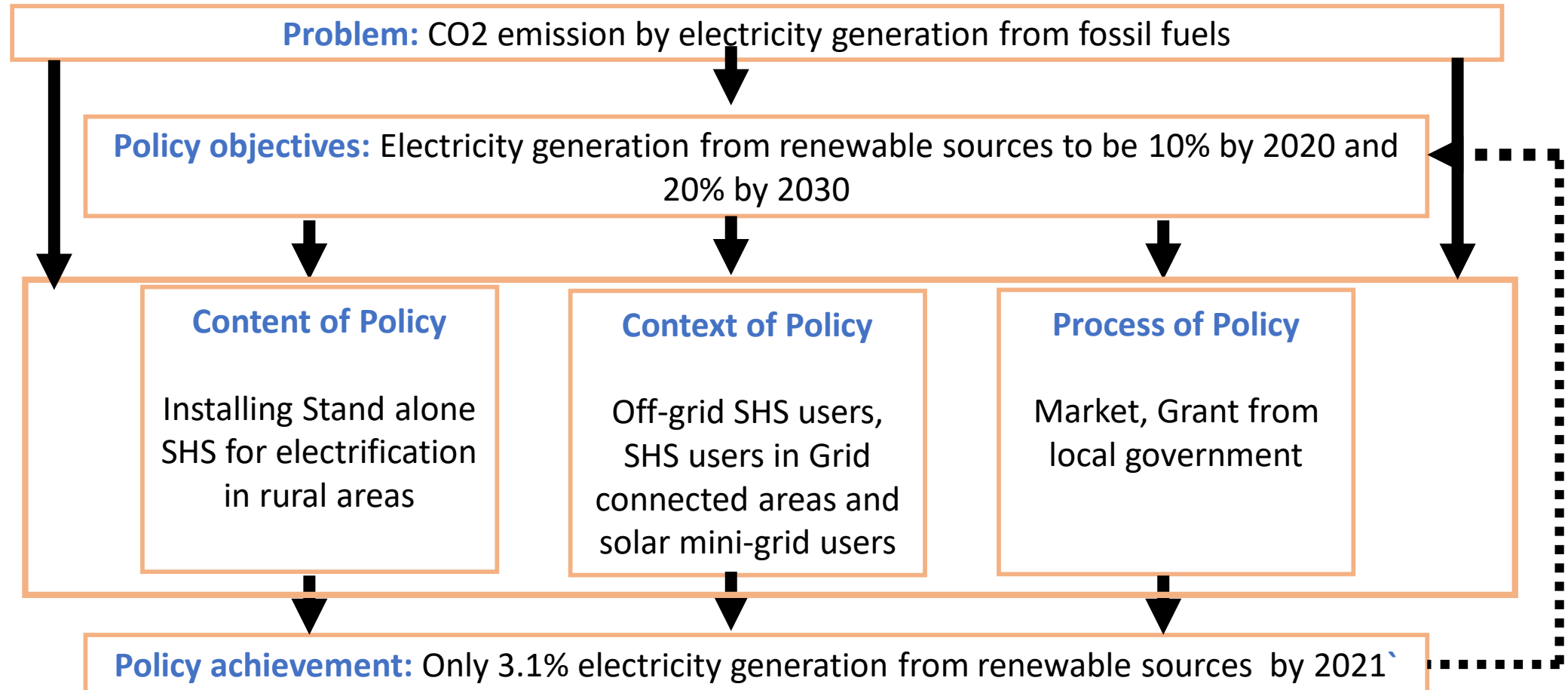


Research Methodology (Contd.)

- Data analysis



Policy analysis triangle framework



National renewable energy policy 2008

Target

Share of renewable sources for electricity generation be

5% by 2015

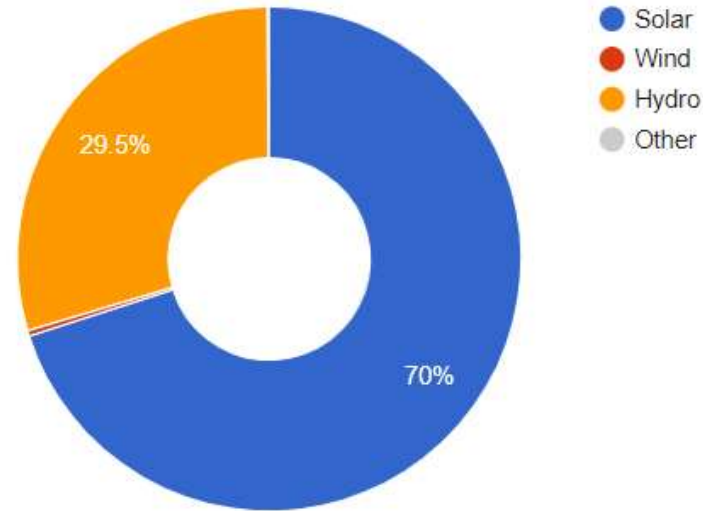
10% by 2020

20% by 2030

SHS and Renewable energy scenario by 2021

Fuel/Resource	Installed Capacity	Share
Coal	1768 MW	7.02 %
Gas	11330 MW	44.98 %
HFO	6008 MW	23.85 %
HSD	1341 MW	5.32 %
Imported	1160 MW	4.61 %
Renewable	781 MW	3.1 %
Captive	2800 MW	11.12 %
Total	25188 MW	

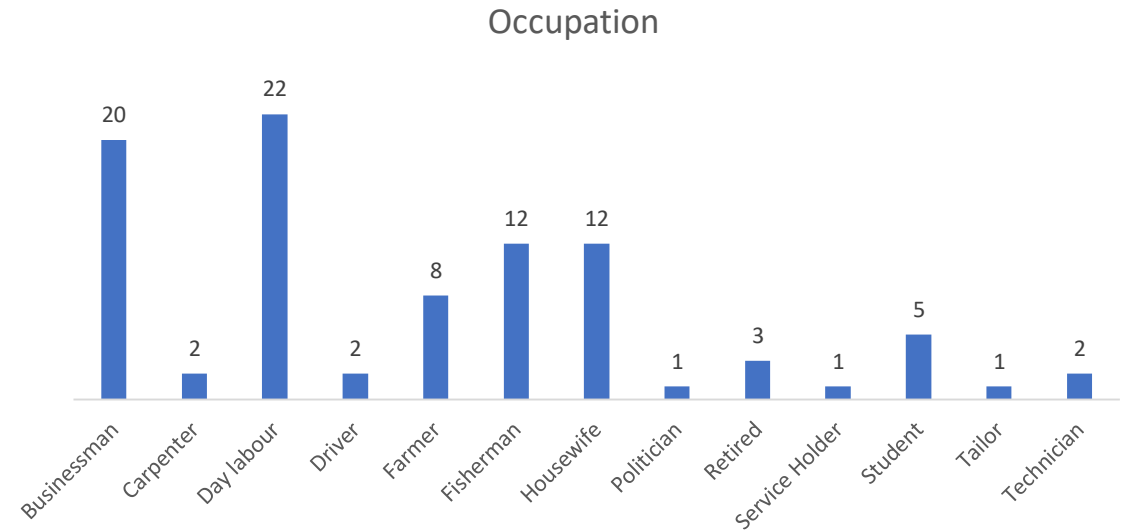
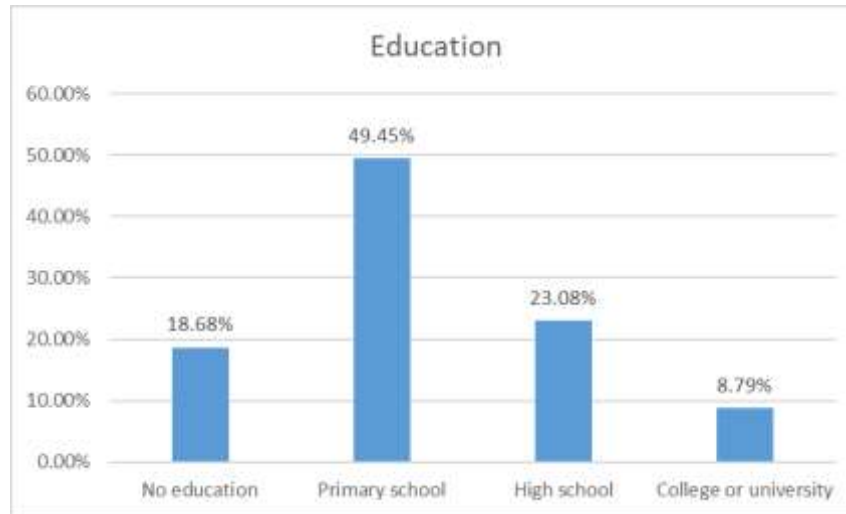
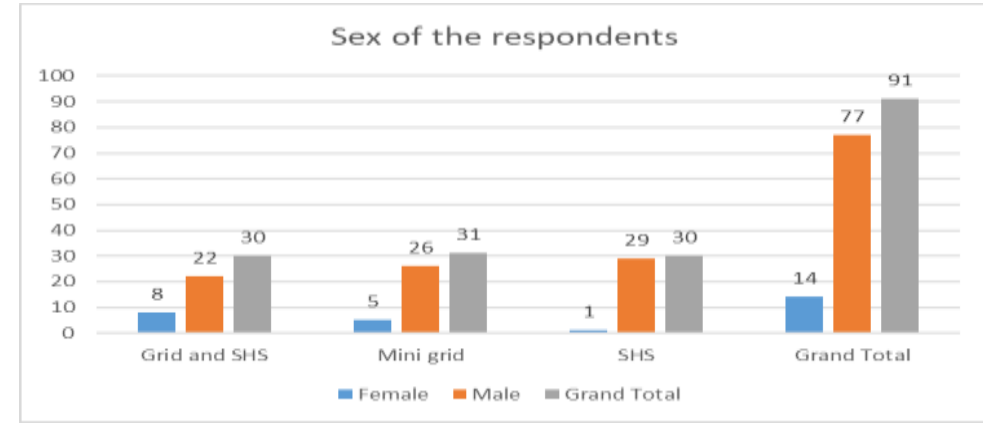
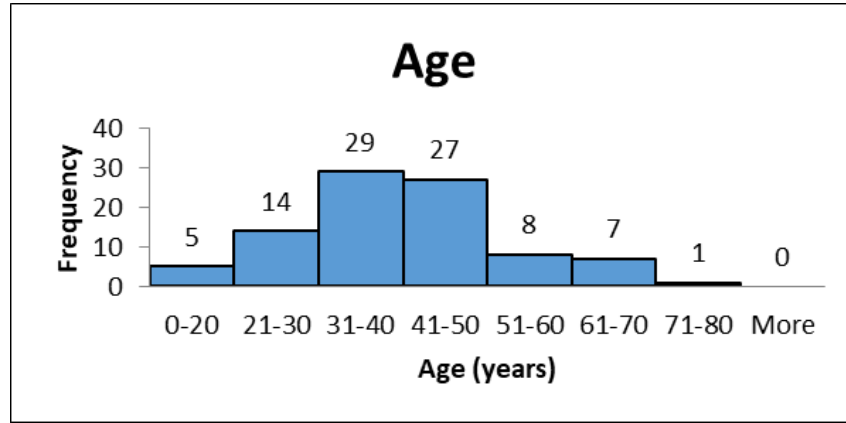
Renewable Energy Share



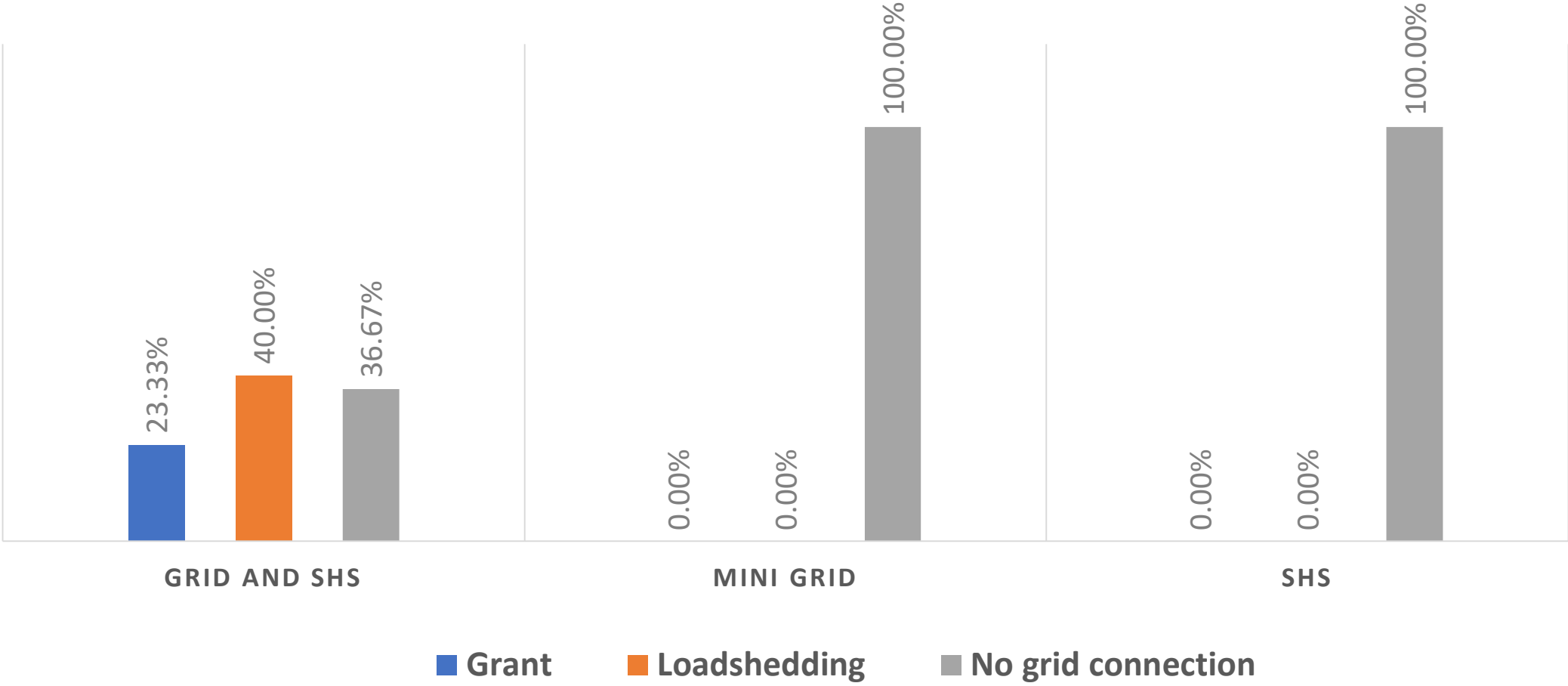
Year	Quantity	Installed Capacity
2021	4105	0 kWp
2020	331921	21.48 MWp
2019	402438	22.06 MWp
2018	390593	16.51 MWp
2017	761285	50 MWp
2016	256012	10.03 MWp
2015	593712	25.56 MWp
2014	912987	33.31 MWp
2013	807587	34 MWp
2012	720619	26.83 MWp
2011	1220641	49 MWp
2006	40	0.8 kWp
2004	21974	0 kWp
Total	6423914	288.79 MW

Preferences and Practices

Demography

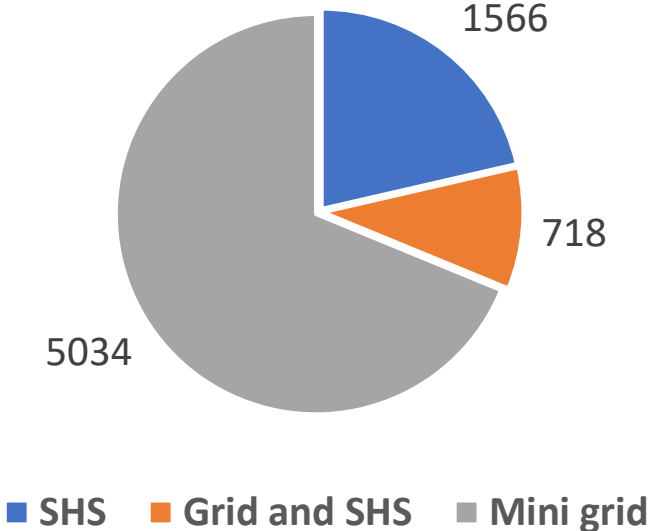


Reasons to take solar system

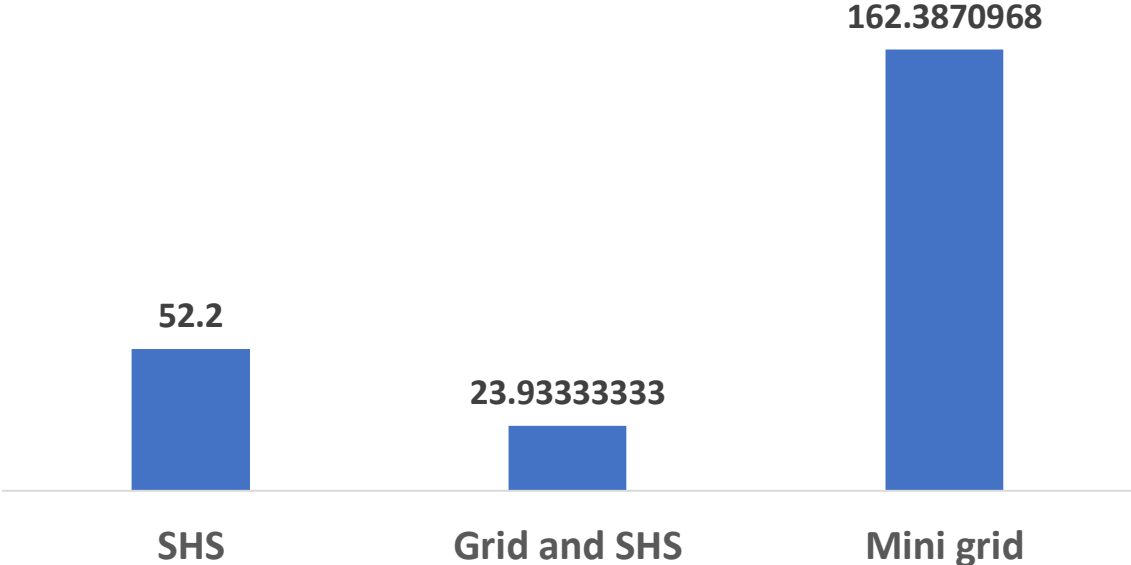


Power usage

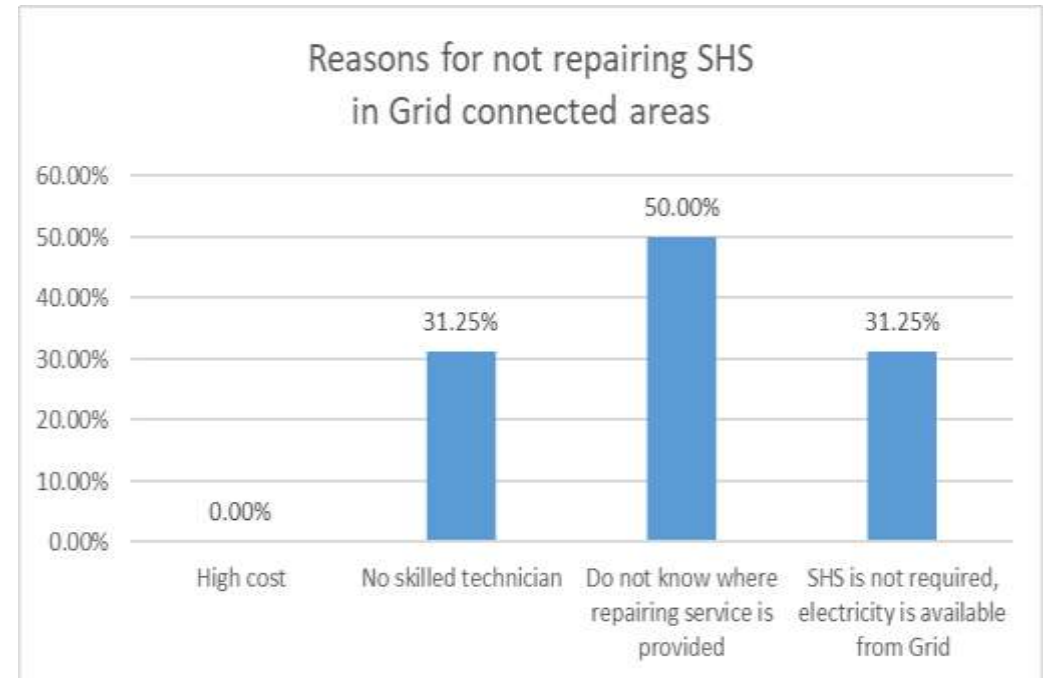
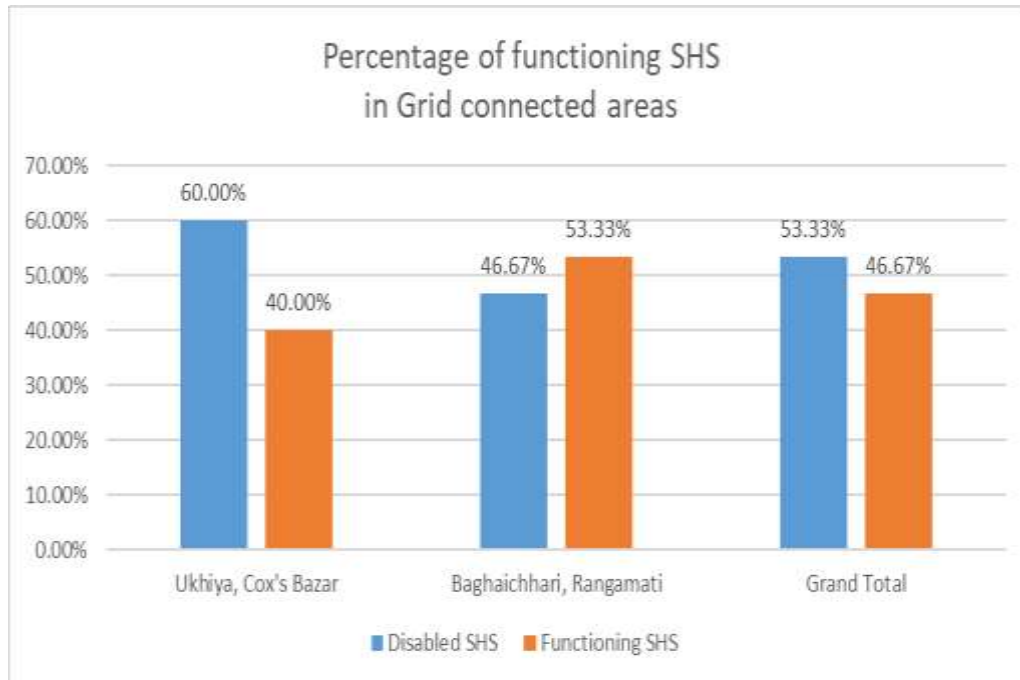
Total Power (Watt)



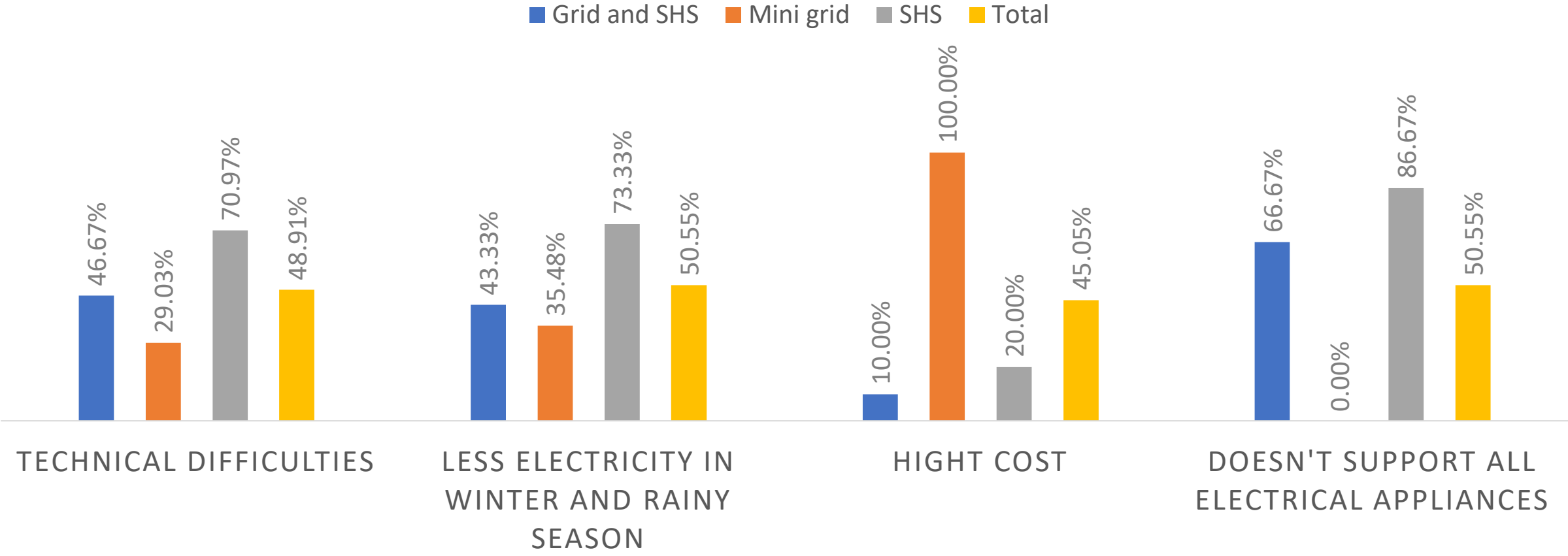
Average Power (Watt)



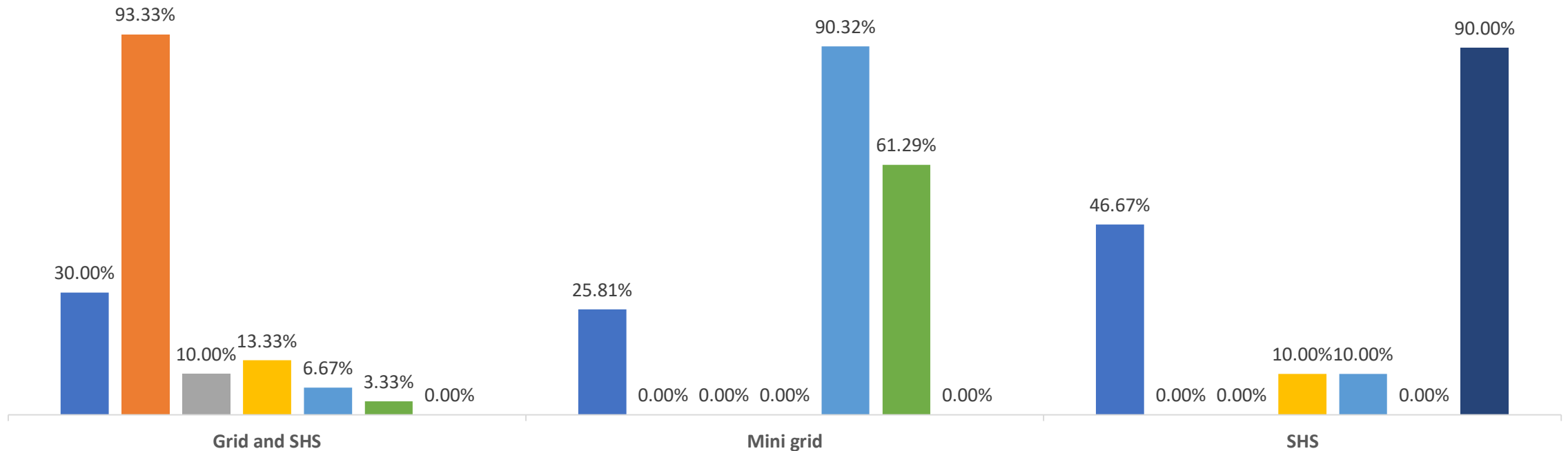
SHS in Grid connected areas



Problems with Solar System



Benefits of solar system

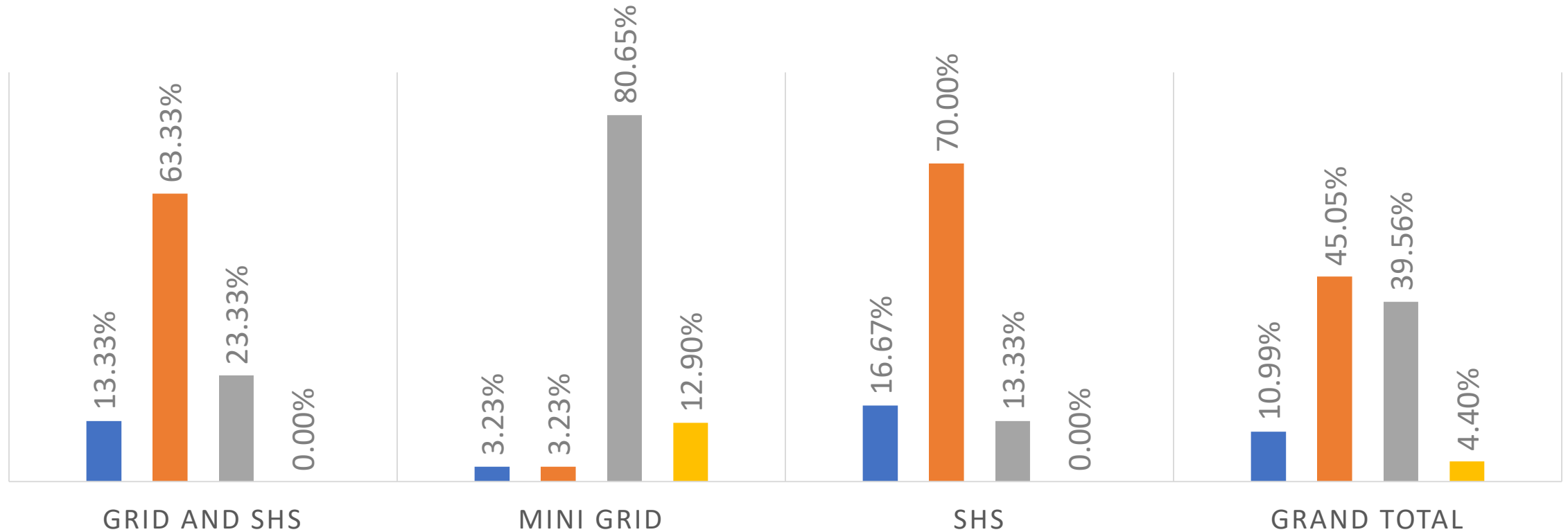


- Helped children to study
- No electricity bill
- low maintenance
- No death risk

- Provide electricity during Loadshedding
- Low cost
- support all electrical appliances

Satisfaction Level

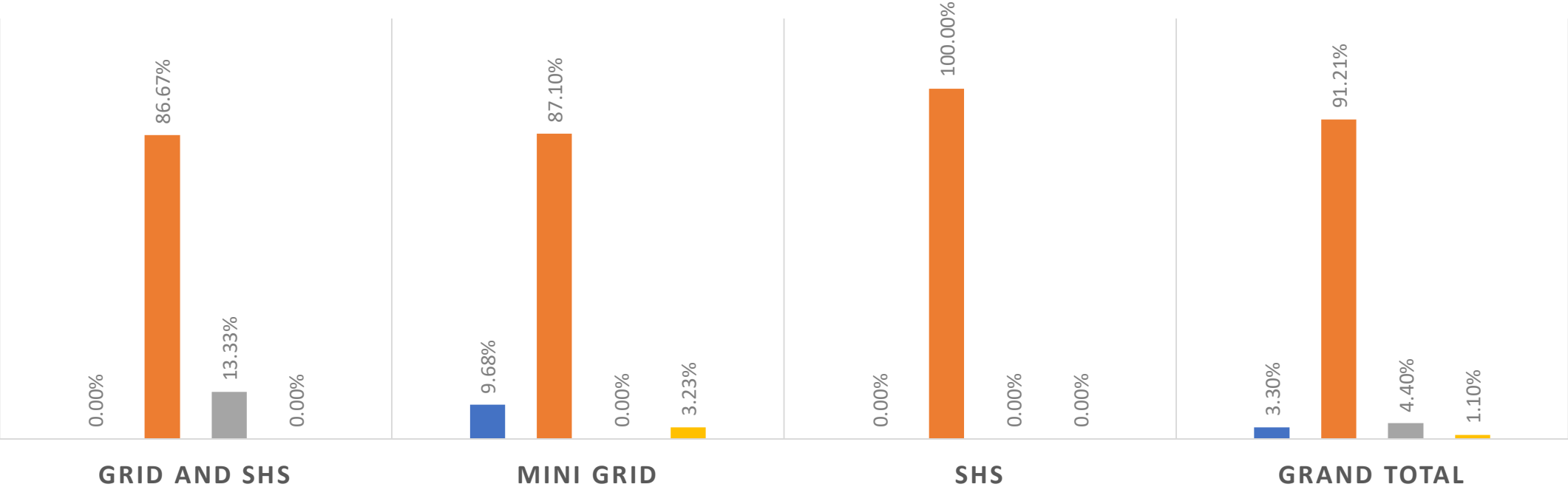
■ Very disappointed ■ Disappointed ■ Satisfied ■ Very satisfied



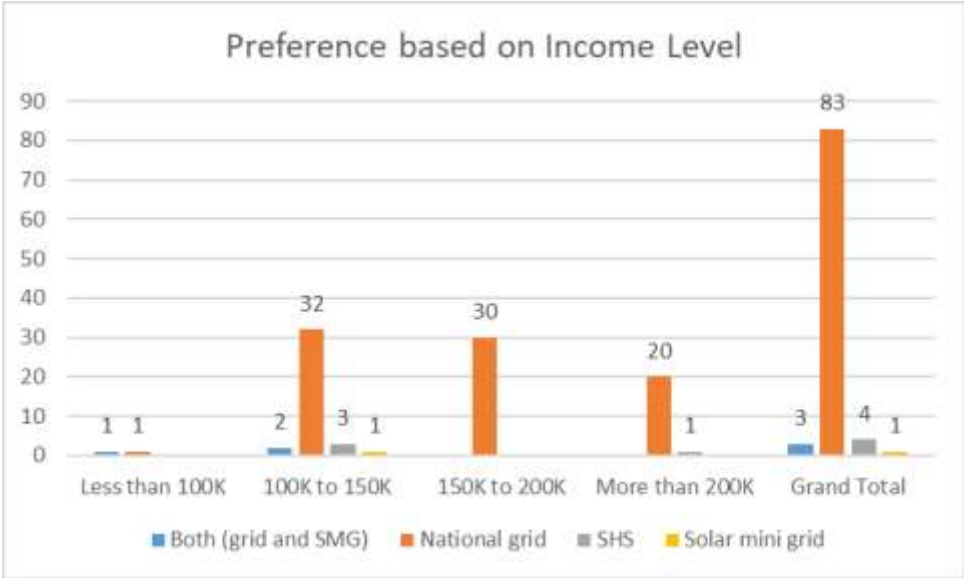
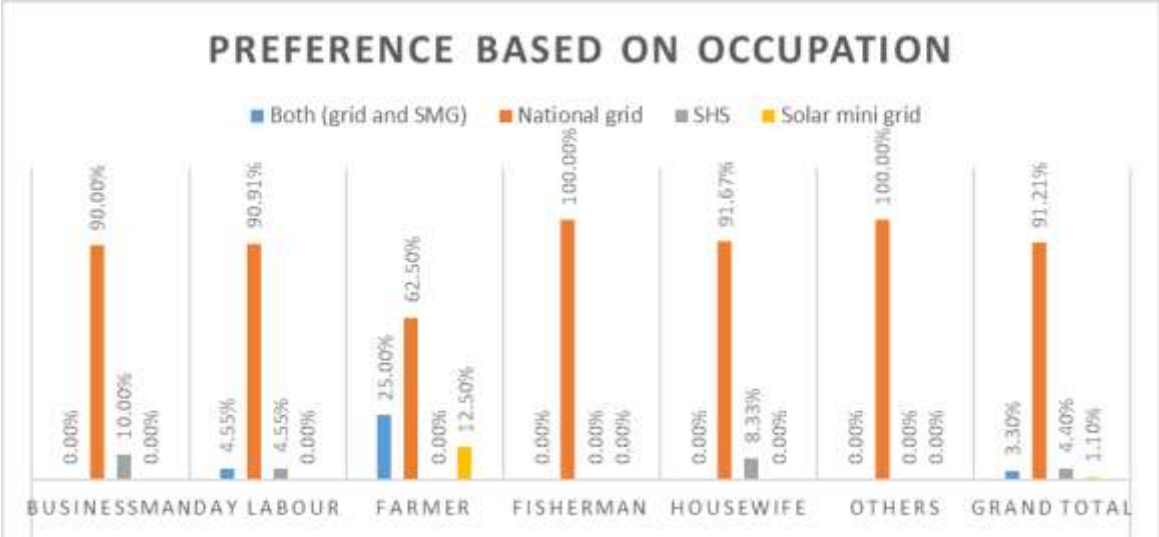
Preferences

PREFERENCE BASED ON SOLAR SYSTEM USERS

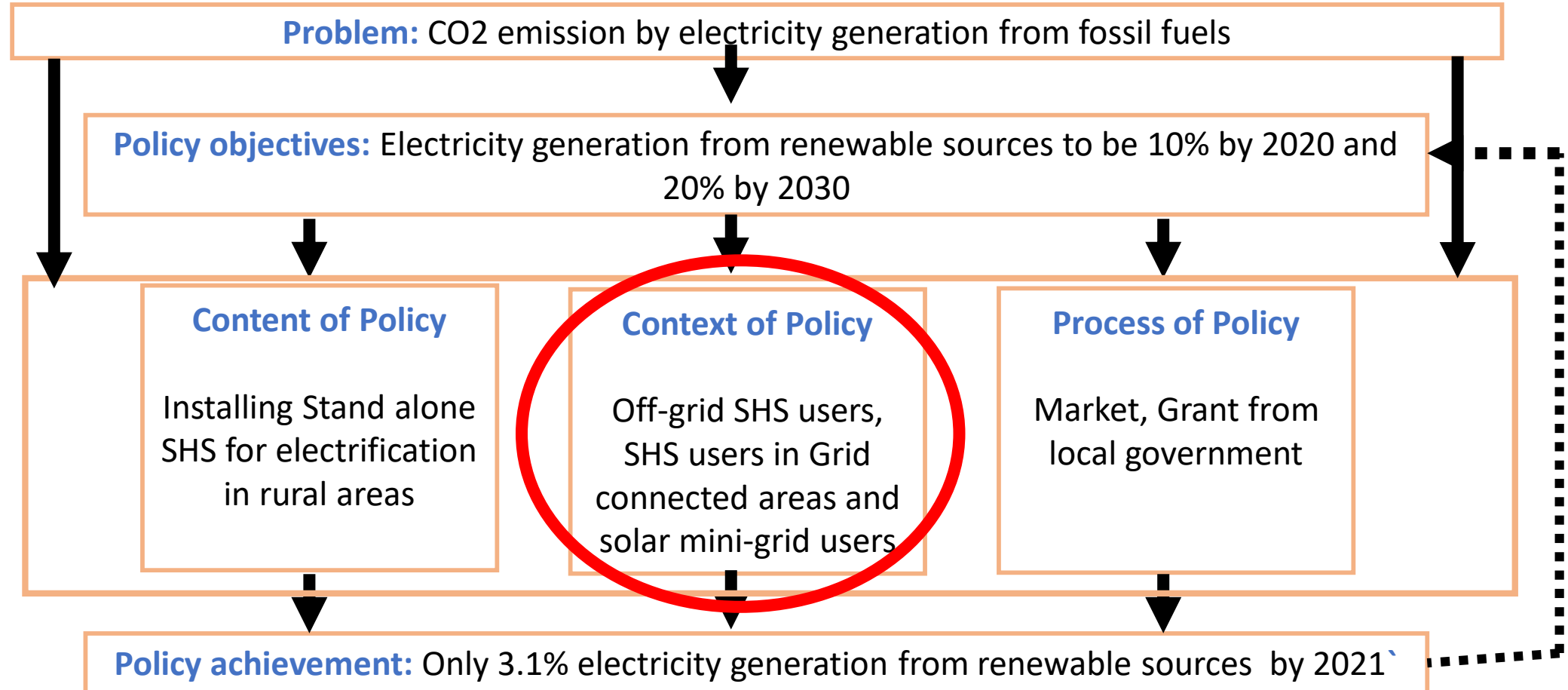
■ Both (grid and SMG) ■ National grid ■ SHS ■ Solar mini grid



Preferences (Contd.)



Discussion



Thank you