

Off-Grid Electric Utility Model to Remote Area



An Experience Sharing
of
Salleri Chialsa Electricity Company Limited (SCECO),
Solukhumbu, Nepal
ACEF-2018, Manila, 06 June, 2018

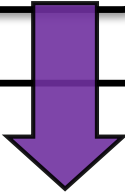
Krishna Pd. Nepal
General Manager, SCECO
npl.krishna@gmail.com

Story of Establishment

Concept: History began with concept of Clean Energy and Environment.



Project: Salleri Electricity Utilization Project (SELUP)



Registered as Public company in 1990 : Electric Utility responsible for generation, transmission and distribution of electricity for more than 2000 households in Salleri town and surrounding villages

Capital Structure

Preference share: 50% Swiss Agency for Development and Corporation (SDC) and 50% Nepal Electricity Authority (NEA)

Ordinary share: 33% SDC, 33% NEA and 34% Local People

Unique ownership: Every electricity user customer (Local People) who is permanent resident of distribution area is a shareholder of a company

SCECO has an active Board (policy making body) which compose of altogether 9 members of which 3 are elected from the local electricity users, 3 represent NEA and 3 are from SDC



General Information of the System

- The power plant is a classical run off river scheme, designed for 633 kW capacity in three units equipped with two turbine alternator groups each with capacity of 180 kW and other with capacity of 273 kW.
- The electricity is supplied through 11kV transmission lines and distributed through 380/220 V underground cables.
- The distribution line comprises 35 numbers of transformers and Main Distribution Box (MDB) along with 215 numbers Sub Distribution Box (SDB).



Operation and Management

- Overall Operation and Management is governed by
 - Memorandum of Association (MOA) and Article of Association (AOA) of SCECO
 - Company act of Nepal
 - Electricity rule of Nepal
 - Staff Service Rule of SCECO
 - Connection Policy of SCECO
 - Investment Policy of SCECO
 - Community electrification directives



Electricity User Committee: Idea of rural electrification

- **People of surrounding villages of Salleri town started to demand for electrification in their villages but SCECO could not extend their network because**
 - Lack of fund
 - not possible to carry out day to day operation of distribution network due to limited numbers of staff and far distance
- **To address the above issue concept of “Electricity User Committee for community electrification” introduced in which**
 - People themselves participate for development electrification in their area
 - People form electricity user committee responsible to raise the fund from government /donor agency required for network extension and operation and management of low voltage distribution networks.
- **SCECO is responsible for design, estimation and supervision of network expansion and all technical support required during implementation and operation of networks.**
- **At present more than 500 households are benefitted through 7 electricity user committee.**

Customer Categorization

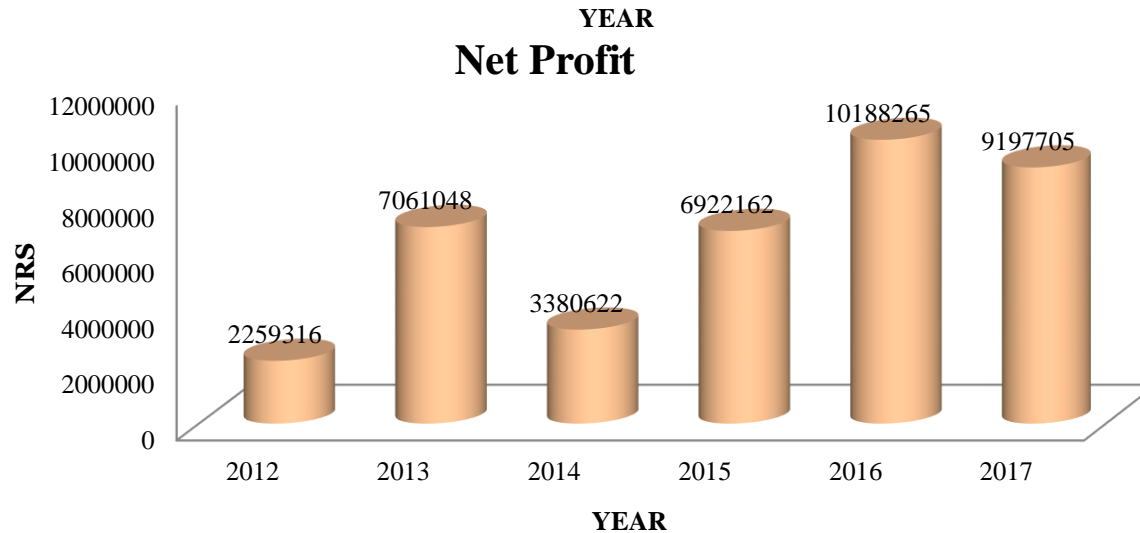
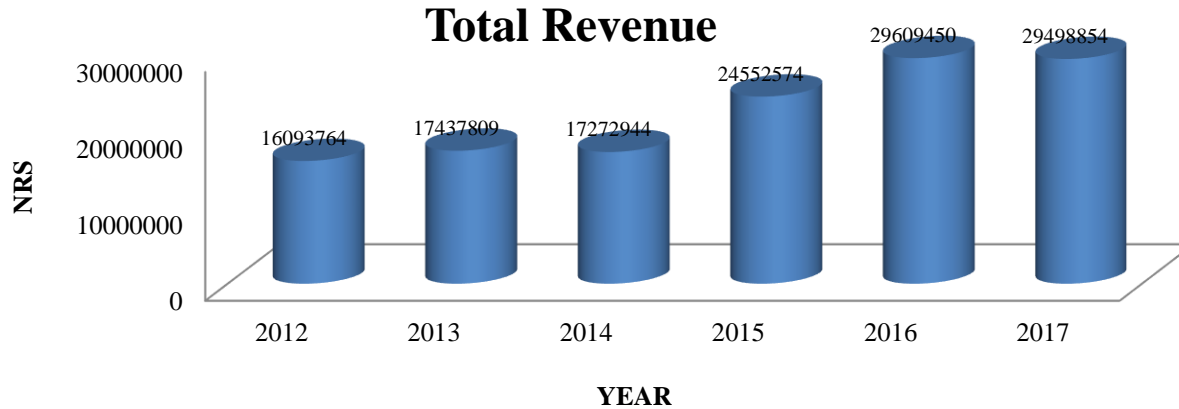
Category	Level	Admitted Power (kW)		Exempted Unit/Month (kWh)	Remarks
Domestic (Residential)	1	0.1		-	Single Phase/Non metering
	2	0.5		-	Single Phase/Non metering
	3(1)	1		75	Single Phase
	3(2)	2		75	Single Phase
Service (School, Hospitals, hotel & Lodges, offices)	4(1)	4		100	Single Phase
	4(2)	8		120	Three Phase
		Off Peak	Peak		
Industry (Small industries e.g. saw mill, grinding mill, electricity user committee)	5(1)	>10.0	0.1	80	Three Phase
	5(2)	>10.0	0.2	80	Three Phase
	5(3)	>10.0	2	120	Three Phase
11 kV		>20	4		Three Phase/Tr- er
Peak Hour		Morning (6:00 AM to 10:00 AM)			
		Evening (5:00 PM to 9:00 PM)			
Off Peak Hour		Others than Peak Hours			

Current Tariff Structure

Level	Admitted Power (kW)		Exempted Unit (kWh)	Fixed Rate (NRs/Month)	Per Unit Rate (NRs/kWh)
1	0.1		-	130.00	-
2	0.5		-	400.00	-
3(1)	1		75	475.00	9.00
3(2)	2		75	650.00	9.00
4(1)	4		100	980.00	9.00
4(2)	8		120	1800.00	9.00
	Off peak hour (kW)	Peak hour (kW)			
5(1)	>10.0	0.1	80	475.00	7.00
5(2)	>10.0	0.5	80	650.00	7.00
5(3)	>10.0	2.0	120	1200.00	7.00
11 kV	>20	4		300.00 per kW (Demand Charge)	9.00

NRS 107.00= 1 USD

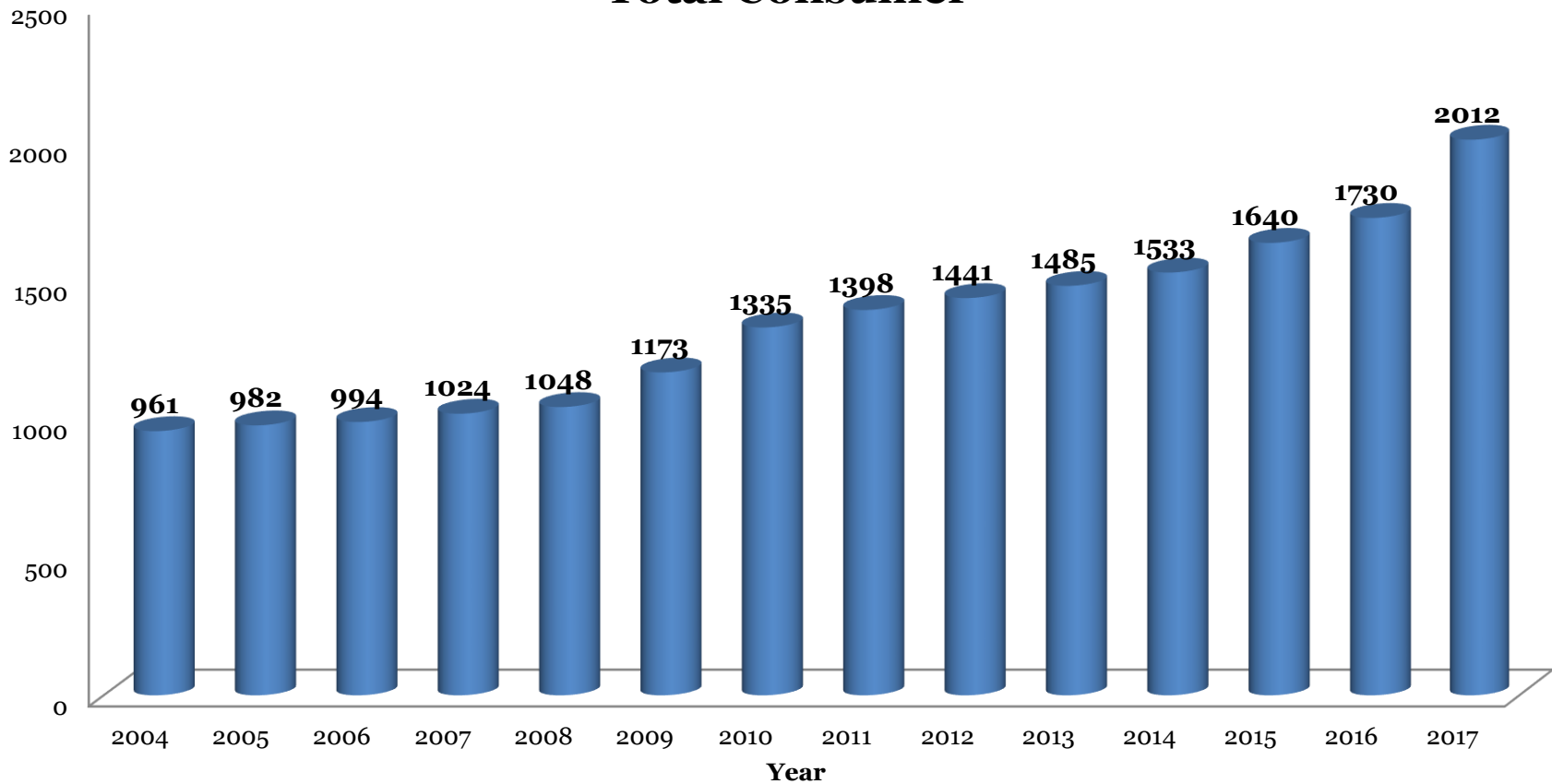
Financial Highlights



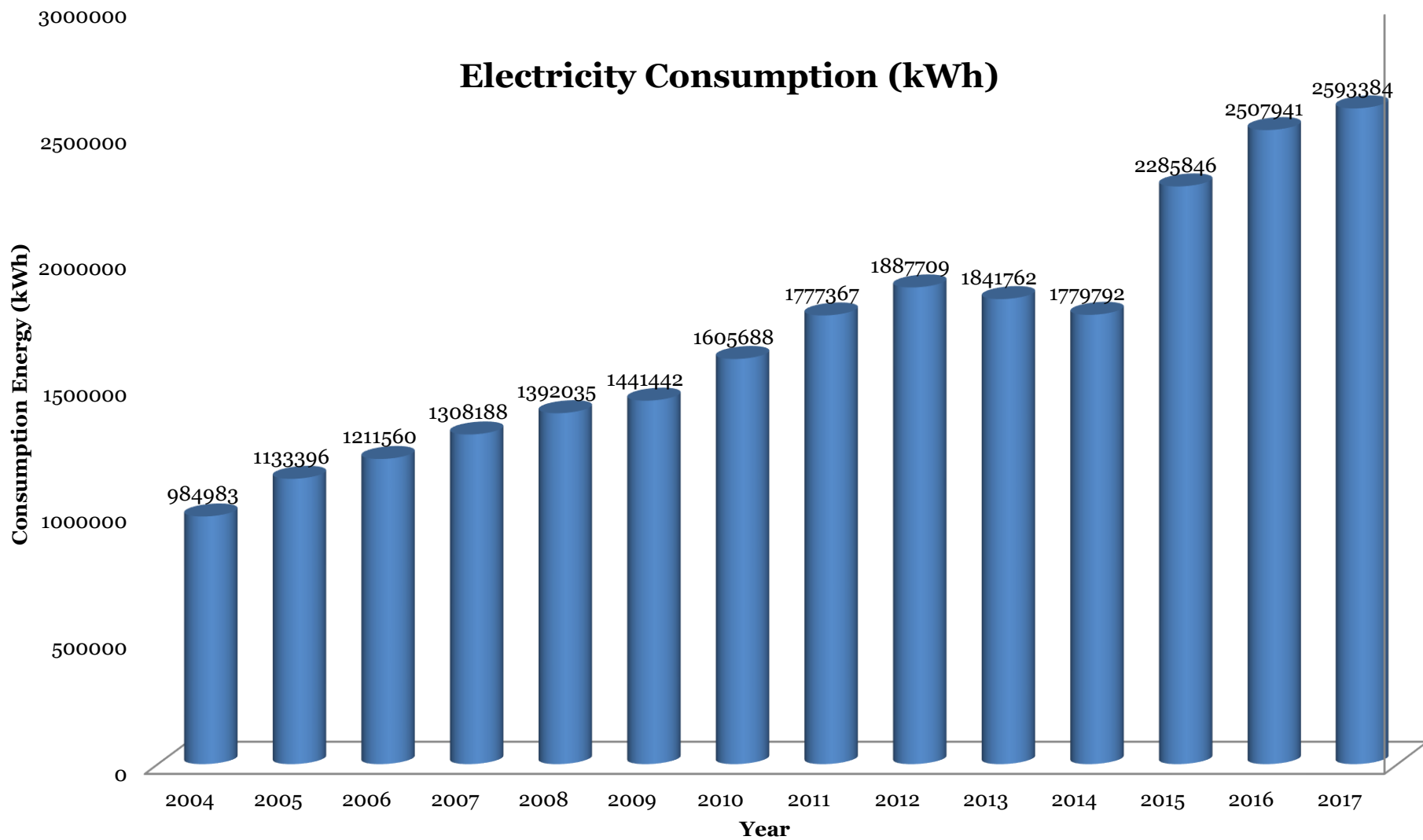
NRS 107.00= 1 USD

SCECO Statistics

Total Consumer



Urban consumer : Electricity user committee consumer=3:1





Challenges

- Management of underground distribution network in recent development works like road, water supply and drainage.
- To address the growing electricity demand in the system.
- Geological Vulnerability around powerhouse and 11 kV line route.
- As a Isolated system, very difficult to maintain high supply availability.
- Unavailability of genuine spare parts in local market.
- Retention of skilled manpower
- Social issues (land acquisition) during transmission and distribution networks.

Some Snaps



SCECO Head Office



Intake of Plant



Generation unit 1 & 2



SCECO distribution feeders



SCECO AGM



People queuing for bill payment



SCECO awarded for highest
tax payer in district



Staffs awarded for their service more
than 20 years



THANK YOU!!!