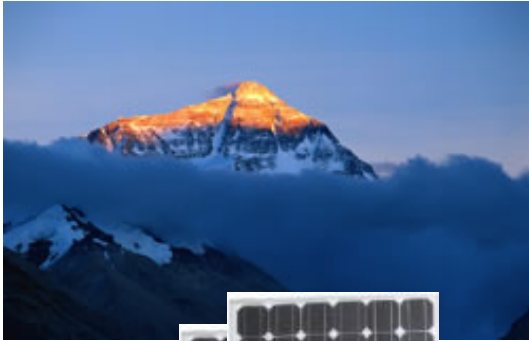


Gham Power: EPC to Energy Services

Anjal Niraula, GM
Gham Power



Gham Power: Solar EPC Transitioning to Developer/Energy Services Model



- Started in 2010
 - Develops commercial solar + rural microgrids
 - Focus on businesses and productive use
- 1.2 mW installed; 900+ projects:
 - UNICEF (42 kW)
 - Nepal's first solar microgrids in Khotang (70 kW)
 - Powers 2 Ncell telecom towers
 - Ratnanagar Hospital (21 kW)
- Current project pipeline worth \$10 million, including:
 - 515 kW/ \$900k contract for CIAA building
 - 115 kW/ \$160k contract for Teaching Hospital

Energy Crisis in Nepal

16 Hour Daily Blackouts

7 Million
Without Electricity

21 Million
Grid Connected

500 MW
Energy Deficit

531 MW
Privately Owned
Diesel Generators

Started with Solar Home Systems

Residential Systems – Direct Sales or Financed

Price: \$1,000 - \$5,000

Size: 200 watts – 1 kW

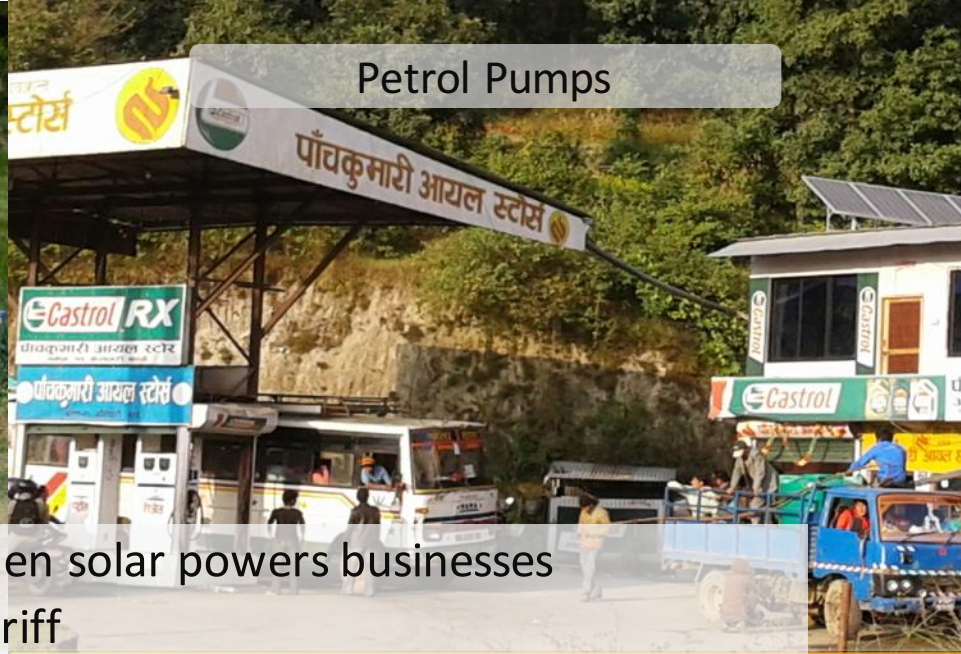
- For Urban Households
- 5-year bank financing or cash purchase
- Unpredictable installation labor costs depending on house wiring conditions
- High support cost
- Difficult to scale

Found Scale with Productive End Use (PEU)

Grinding Mills

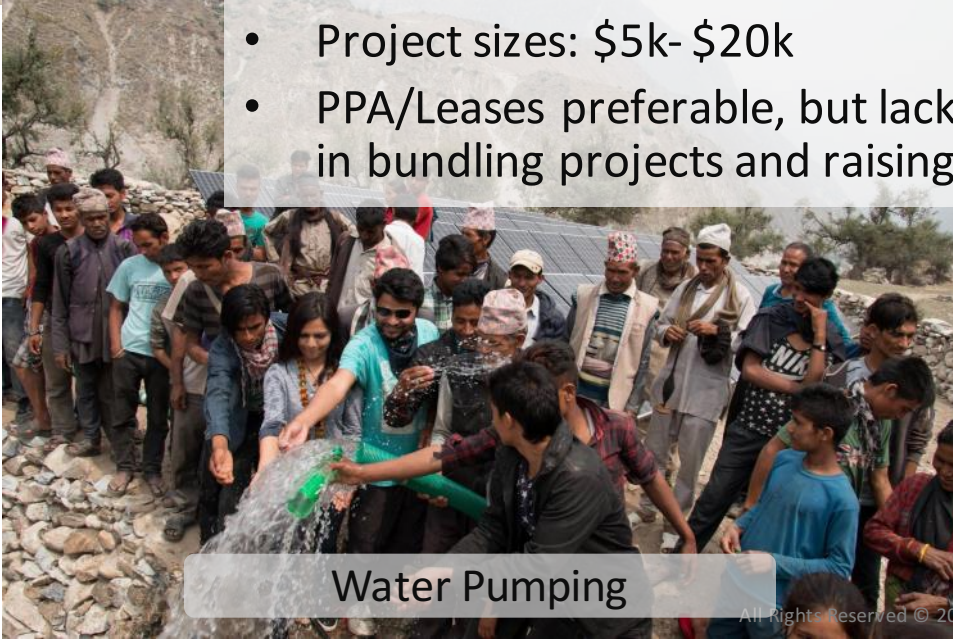


Petrol Pumps



- System size/revenue higher when solar powers businesses
- Increase in income > energy tariff
- Project sizes: \$5k- \$20k
- PPA/Leases preferable, but lack of customer credit scores a hurdle in bundling projects and raising investment

Water Pumping



Small Hospitals/ Clinics



Started Developing/Deploying Commercial & Industrial Solar

Size: 30 kW and higher

Price: \$50k+

Diesel Usage: **50+% ↓**

Reduce Costs: **20+% ↓**

- Highly motivated customers for lease or PPA models
- “Chicken or egg problem” – need to set up an investment fund before approaching customers
- Need to beat bank interest rates

43 KW System at UNICEF HQ Office Complex in Kathmandu

Developed/Deployed 70 kW Microgrid Pilot



Supported by



- Long development time not sustainable
- Solution: phased approach -> start with PEU anchor loads, then extend to microgrids

Project Financing Key to Scale: Direct Sales Model

- Payment terms: 10-20% upfront; remainder @ completion
- Need bank debt to fund installation for 1-3 months
 - 70% of project value in letters of credit or cash
 - 5-10% performance bond
- Bank debts require 30% cash as equity + assets on balance sheet
 - Require much less with a credit guarantee (local/ international)
- We are constrained by our current credit line of \$250k (and cash position), not by our pipeline

Project Financing Key to Scale: Pay-As-You-Go (PAYG) / Lease Model

- Multiple projects bundled into SPV
 - Equity investment = 30 to 50% of project cost
 - 50 to 70% in bank debt
 - SPV hires Gham Power to install & maintain projects
- SPV earns ongoing income from energy customers
 - Customers pay flat fee per month
 - SPV pays annual or quarterly dividend to investors
 - Target IRR: 15% or higher
- Customers compare lease/PPA rates to bank financed rates
 - Need to beat bank financing, AND
 - Generate savings compared to current energy costs

Raising funds to implement projects

- Banks hesitant in lending to rural customers
 - No credit ratings
 - Lack of branches in rural areas
- MFI's constrained to lend >\$2000
- Currently developing bundle of projects for PEU approach
 - Specific geographic areas
 - Developing dealer/agent network
 - Aggregating projects together for institutional investors

Current Pipeline Value Estimate: \$10 million

\$5 mm from Current Customer Proposals

System Type	# of Projects	Project Value
C&I	47	\$ 3,342,076
Microgrid	24	\$ 638,340
PEU	113	\$ 603,318
SHS	3	\$ 7,019
Grand Total	187	\$ 4,590,753

\$5 mm from Tenders/RFP's – announced and upcoming

Project Name	Size (kW)	Value	Estimated Close	Estimated Installation Start
Chitwan Medical College - Hostel	70	\$ 205,000	2016-April	2016-June
Chitwan Medical College - Hospital	650	\$ 1,200,000	2016-June	2016-September
CIAA*	514	\$ 980,000	2016-April	2016-June
Package 1		\$ 2,000,000	2016-October	2017-January
Package 2		\$ 1,000,000	2016-October	2017-January
	Total	\$ 5,385,000		

* Already awarded

Team: Gham Power



Sandeep Giri
CEO

Silicon valley entrepreneur; originally from Nepal; launched multiple successful software Ventures as CTO/CEO since 2001; last company acquired by Oracle



Anjal Niraula
General Manager

Renewable energy expert. Researched renewable projects for NAST. Master's Degree in Renewable Energy from UK and Germany.



Sudeep Tuladhar
Operations Manager

7+ years' experience in managing operations in large scale manufacturing and construction Projects. MBA from AIM, Master's Degree in Production Engineering from MNNIT, India.



Jeevan Baidya
Installations Manager

5+ years of hands-on experience in both urban and rural solar PV project development, execution and installation.

Social Enterprise with Strong Partners

Technology



Finance



one to watch
impact investment
entrepreneurs



Development
Agencies / Funds



ASIAN DEVELOPMENT BANK



Government of Nepal
Ministry of Population and Environment
Alternative Energy Promotion Centre
Making Renewable Energy Mainstream Supply in Nepal

Way forward

- Difficult executing large projects as EPC
 - Working capital issues
- Microgrid → difficult without continuous subsidy & clarity in policies
- PEU approach of microgrids easier to scale
- Financial support required for both EPC and Energy service models
- Raising additional funds
 - Option to invest as convertible note, Series A or directly into projects

Thanks, Contact Us for More..

