# SAARC Knowledge Sharing Workshop on "Modern Techniques Including Renewable Energy Auctions for Economizing Renewable Energy Tariff"

## Sri Lanka Country Presentation

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S.H. Midigaspe
Chief Engineer (Renewable Energy Projects)
Ceylon Electricity Board

# Overview of Country & Power Sector

| | |
|---|---|
| • Population | – 21.4 million |
| • Area | – 65,610 km$^2$ |
| • GDP per Capita | - 3,857 US$ |
| • Installed Capacity | – 3,500 MW (approx., without NCRE) |
| • NCRE Capacity | - 560 MW |
| • Capacity Mix | – Hydro 40% Thermal 60% |
| • Energy Mix | – Renew 31% Thermal 69% |
| • Peak Demand | – 2,500 MW (approx.) |
| • Energy Generation (net) | – 14671 GWh |
| • Energy Sales | - 13,431 GWh |
| • Trans. & Dist. Losses | – 8.5 % |
| • Electrification level | – 99.3 % (estimated) |
| • Per capita consumption | – 628 kWh |

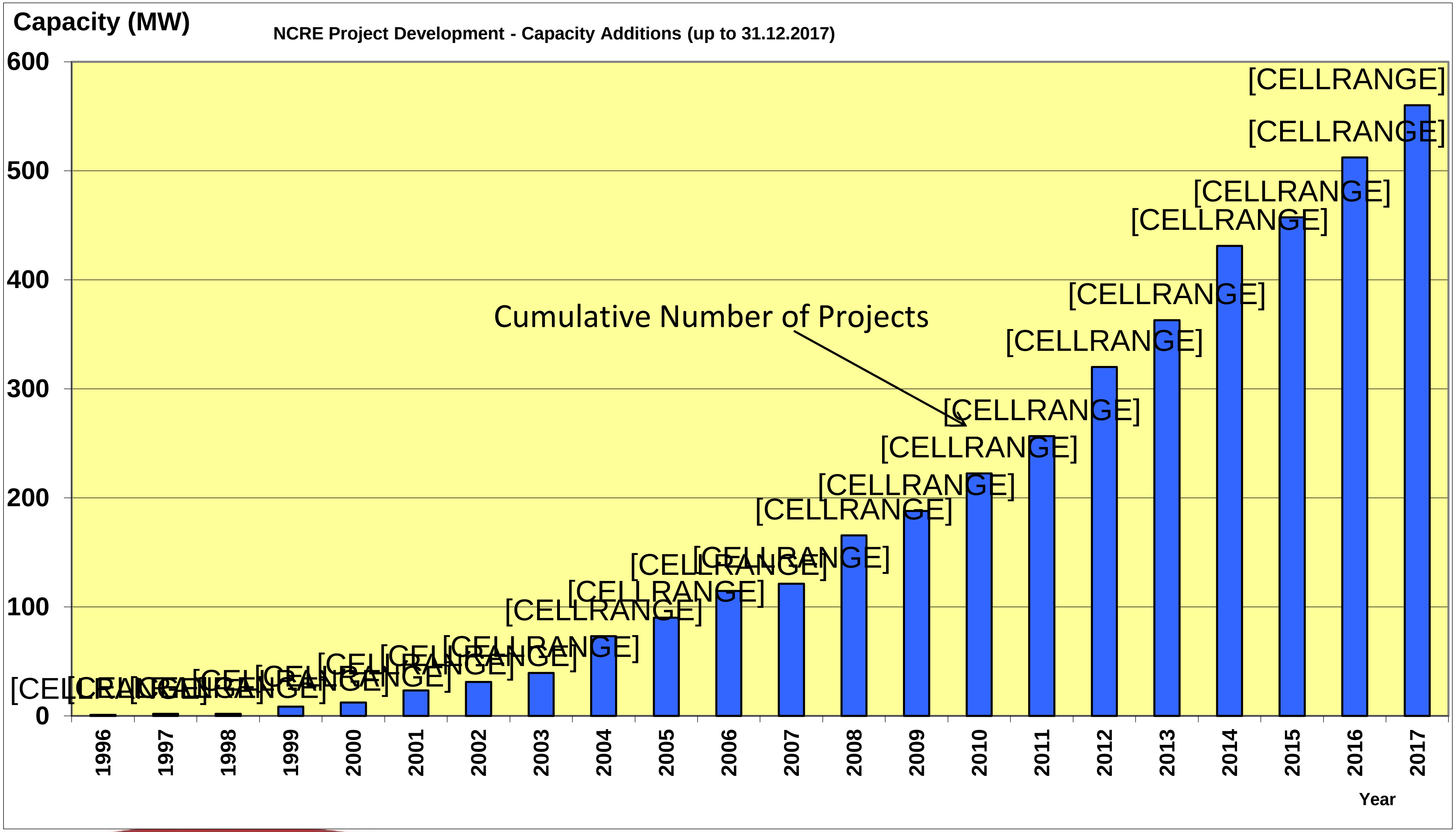
End 2017 draft data

# Present Status of NCRE (end 2017)

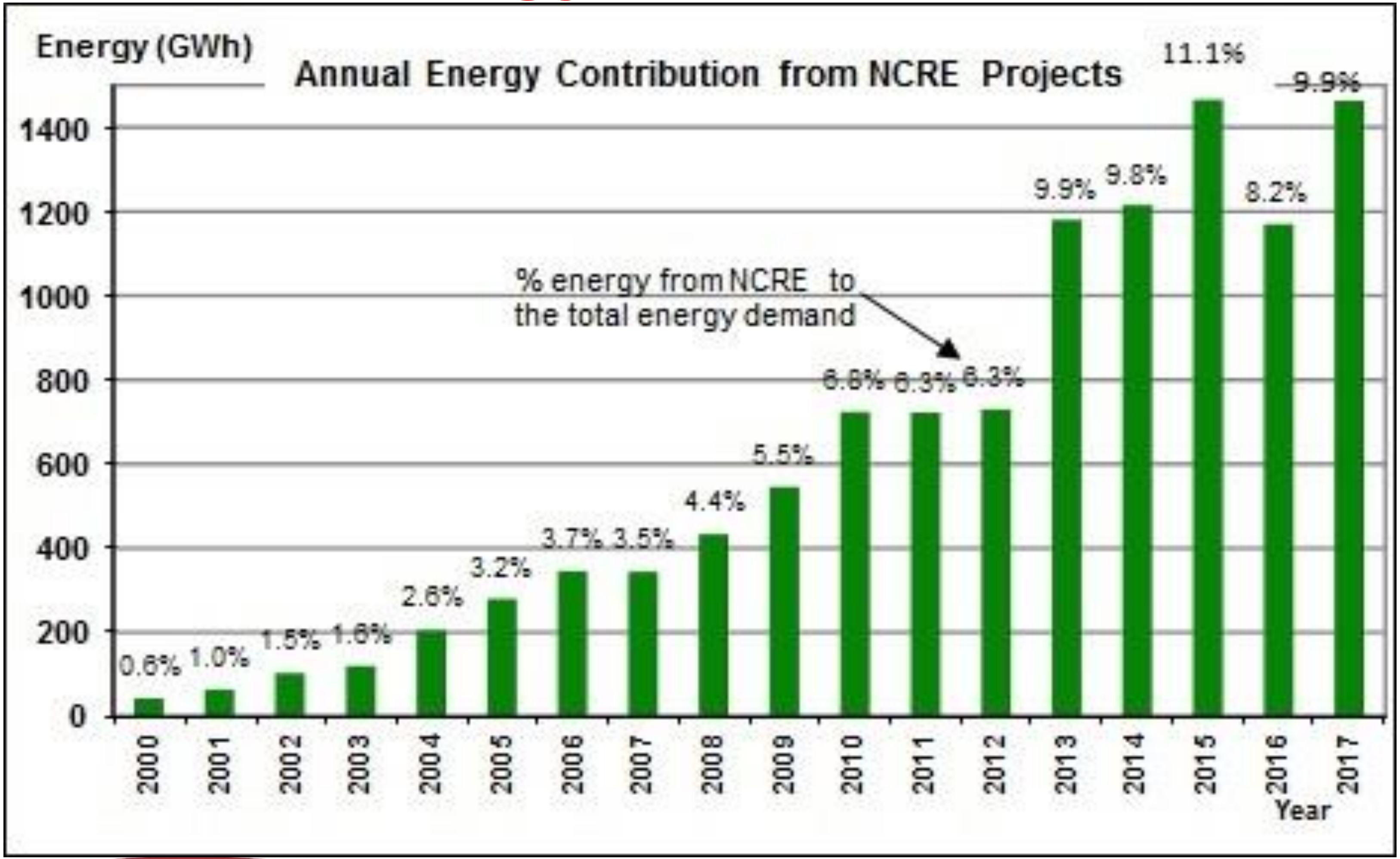
| Description | Project Type | No. of Projects | Capacity (MW) |
|---|---|---|---|
| **Commissioned Projects** | Mini Hydro Power | 182 | 354 |
| | Wind Power | 15 | 128 |
| | Biomass-Agricultural & Industrial Waste Power | 4 | 13 |
| | Biomass – Dendro Power | 6 | 13 |
| | Solar Power | 8 | 51 |
| | **Total - Commissioned** | **215** | **560** |

NCRE : Non Renewable Energy

# NCRE Development



# Energy from NCRE



# NCRE Tariff Background

- NCRE, mainly Mini Hydro, was on Feed in Tariff at the start
- 1996 – 2007 : Avoided cost principle
  - Tariff based on avoided cost of thermal energy
  - 15 Year contracts, first come first served basis
  - Tariff published annually
- 2008 onwards Technology Specific Cost Reflective Three Tier Tariff
  - Tariff is based on the Cost incurred
  - Different for different technologies
  - Three tiers based (8-7-5 years)
  - 20 year contracts
  - Sri Lanka Sustainable Energy Authority also established at this time

# NCRE Tariff Background contd.

- In 2012 CEB has taken a policy decision to call for bids to develop Wind and Solar Power projects (<10MW).
- Sri Lanka Electricity Act 2009 and as amended in 2013 has given provisions to implement competitive bidding process to develop NCRE projects

# Competitive Tendering of NCRE Projects

1. 10MW X 02Nos. Wind Power Projects - 2015
2. 1MW X 60Nos. Solar Power Projects -2017
3. 10MW X 02Nos. Solar Power Projects - 2017
4. 1MW X 90Nos. Solar Power Projects - 2018

# 10MW X 2Nos. Wind Power Projects

- 1st ever competitive process for NCRE
- Two sites close to each other in the North (One project NCB other ICB)
- Two resource blocks were identified by the SLSEA in Chavakachcheri
- Transmission Interconnection from CEB
- RFP called in the basis of BOO in December 2015 for a 20 year term
- Bids opened in July 2016 and Award made in January 2017.
- Bids received, NCB – 16, ICB – 12
- Range of bid prices - 12.29 - 29.90 LKR/kWh (FIT at the time : 23.00 LKR/kWh approx.)
- Awarded tariff – 12.29 LKR/kWh first year tariff for both NCB & ICB projects
- Three tier tariff – bid for the first year price
- Land to be provided by CEB
- Proposal Security and Performance Security required
- 80% tariff adjustable for USD/LKR variation between Tender opening and PPA date
- Otherwise LKR flat tariff no forex component
- At present – approvals being taken

# 1MW X 60Nos. Solar Power Projects

- 1st Tendering for Solar PV
- Three 1MWpk projects each, in identified 20 grid substations
- Bids for each grid sub evaluated separately
- Land (2 hectares) – by the developer – ownership/lease to be shown
- Interconnection cost also to the developer
- Proposal security 2 MLKR, Performance security – 15 MLKR
- One company allowed to bid only for one project
- Policy guidance to give opportunity to local small scale entrepreneurs to invest
- Flat Tariff for 20 years , no forex variation compensation
- Tariff Ceiling of 18.37 LKR/kWh

# 1MW X 60Nos. Solar Power Projects Contd.

- RFP called in February 2017 and closed in June 2017.
- 100+ bid documents purchased and 65 bids received
- Bids awarded (LOI issued) in February 2018 to 35 bidders
- Awarded bids range from 12.73 – 18.37 LKR/kWh (Avg. 17.22 LKR/kWh)
- Comparison with previous FIT tariff of 23.10 LKR/kWh for Solar PV
- Project period – total 24 months (bidders could propose lessor period)
- All approvals to be obtained by the bidders.
- Tendering period and evaluation took a long time
- Large number of bids, criteria/ condition changes during the process, etc

# 10MW X 2Nos. Solar Power Projects

- Both are ICB named as Polonnaruwa SPP & Vavunathivu SPP
- To be connected to Valachchenai GSS & Vavunathivu GSS
- Resource blocks were identified and the developer has to obtain (purchase/lease) required lands within the resource block with
- Interconnection details given and to be developed at the cost of the developer
- Proposal security 20 MLKR, Performance security – 150 MLKR
- Flat Tariff for 20 years . 80% tariff adjustable for USD/LKR variation between Tender opening and PPA date
- Tariff Ceiling of 18.37 LKR/kWh

# 10MW X 2Nos. Solar Power Projects Contd.

- RFPs called in July 2017
- Vavunathivu SPP tender closed in September 2017 & 17 bids received.
- Polonnaruwa SPP tender closed in February 14 2018 & 09 bids received.
- Vavunathivu SPP awarded for 11.86 LKR/kWh (bids range from 11.86 – 18.15 LKR/kWh with Avg. 15.22 LKR/kWh)
- Polonnaruwa SPP waiting for approval to award (bids range from 11.60 – 16.50 LKR/kWh with Avg. 14.43 LKR/kWh)
- Project period – total 24 months (bidders could propose lessor period)
- All approvals to be obtained by the bidders.

# 1MW X 90Nos. Solar Power Projects

- 1MW capacity 90 Projects
- 17 Grid substations – No of projects for each varying from 3-7
- No restriction on No. of projects for a company
- Land ownership conditions eased
- Land requirement reduced to 1.21 hectares
- Ceiling price of 18.37 LKR/kWh
- 533 bid documents purchased
- 508 bids submitted (for all 17 grids)
- Bid tariff range : 12.37-18.26 LKR/ kWh (avg. 16.37)
- Under evaluation at present

# Points to Ponder

- No Reverse Auction has been carried out in SL as of now
- Competitive bidding has brought down the pricing
- Time taken for completing the bidding process is seen as long
- Initial resistance to change of system from developers and other stake holders
- What level of conditions (commercial/technical) to be included in the bid
  - Too strict could discourage potential bidders
  - Too lenient could bring in speculators

# END

# *Thank You*