BARRIERS TO RENEWABLE ENERGY DEVELOPMENT IN SRI LANKA

BY

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- World energy mix: 80% fossil fuel- based

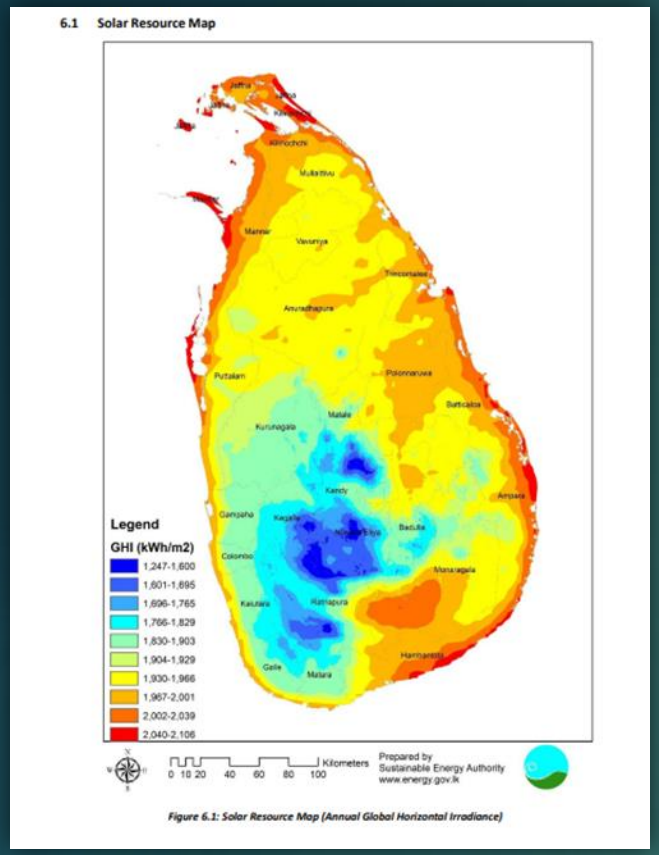
Sri Lanka

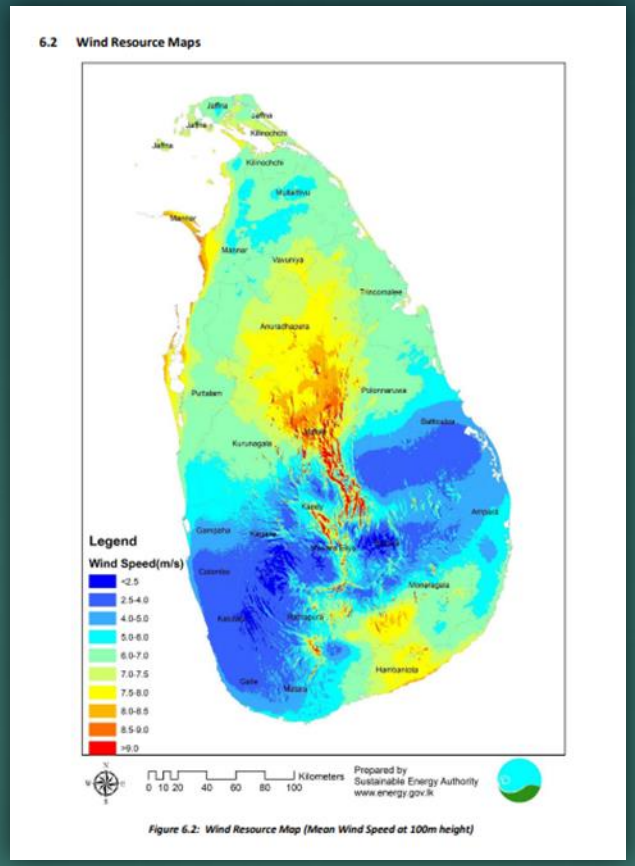
- Fossil fuel 42% : Renewables 58% (2023)
- Hydropower systems set up 40-60 years ago drive high Renewable Energy share

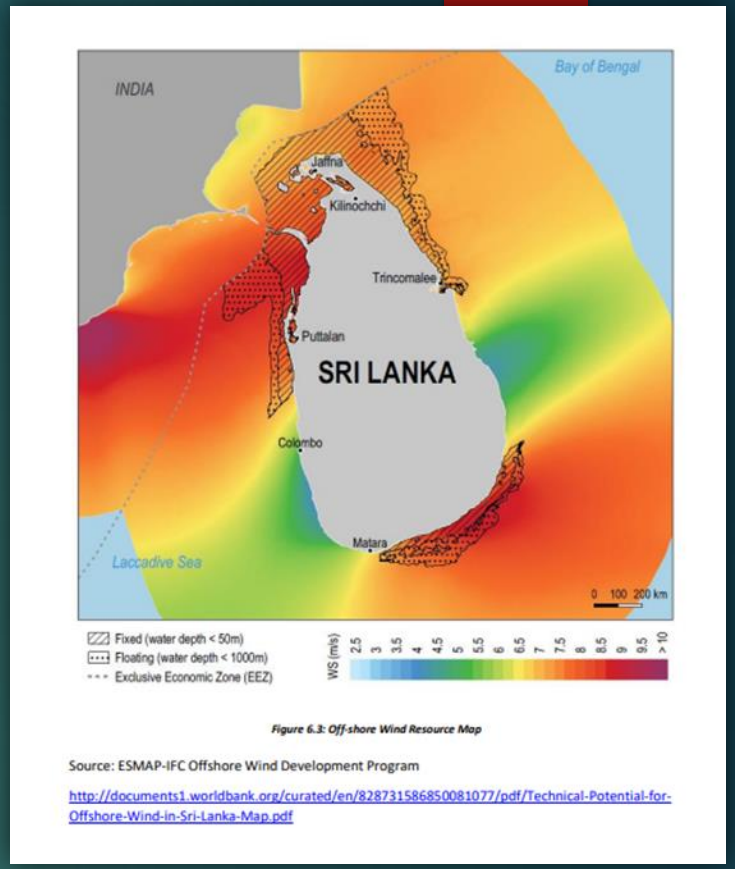
- 2030 target: 70% RE in electricity sector

To meet this target

- Require ~6GW of Non-Conventional RE (NCRE)
- To reach ~9GW total RE on-grid by 2030







Solar Map

Wind Map

Off-Shore Wind Map

Total Wind & Solar Potential

	Potential	Identified	Capacity (MW)
Onshore wind	2,482,401 (ha)	123,874 (ha)	9,910
Offshore wind			92,000
GM Solar	1,234,923 (ha)	59,278 (ha)	29,639
Floating Solar			1,507
Rooftop Solar	6,000,000 (Roofs)		5,000
Total			138,056

Can Sri Lanka achieve this RE target?

ISSUES TO BE RESOLVED

RE target 2030 feasible: current capacity vs 2030 target

Resource	Current capacity (MW)	Capacity Addition by 2030 (MW)	Increase %
Major Hydro	1383	188	14
Pump Storage	**0**	**700**	
Mini Hydro	434	178	41
Wind	263	1491	567
Solar (Rooftop/Ground/Floating)	952	3794	400
Biomass	63	160	254
Battery Storage	**0**	**1125**	
Total (MW) Storage Excluded	**3095**	**5811**	188

Funding: Incentivise investment through reasonable rates of return to investors

- US$ 6.0BN necessary for c.6GW RE set up
- To absorb this RE on to the grid, further c. US$ 6.0BN needed to upgrade and expand the grid

ANNUAL REQUIREMENT: ~US$2Bn - ~3% of Sri Lanka's GDP

- Require reasonable rates of return to incentivize investment into the sector
- Tariffs favoring foreign investors over local investors
  - discourage local investors
  - disadvantageous to the country in the long run – further increase in dollar payments

Recommendation: Same attractive tariffs should be offered to both local and foreign investors

Grid capacity: expand and upgrade to absorb RE

- A fundamental problem in the Sri Lankan grid – originally designed to absorb power from large, centralized plants
- Network upgrade and expansion lagging RE implementation
  - NCRE plants typically small and widespread across the country

Recommendation: Modify and adapt the grid to cater to large number of small RE generators

Core factor: medium- to-long-term consistent government policy

- **Lack of consistent government policy a significant barrier**
  - Proposed electricity act 2024 ill-conceived – takes the country 20 years back if implemented
  - Tariff fluctuations increase the risk premium – makes investors ask for a higher rate of return

- **Failure to promote local entrepreneurs a long-term concern**
  - Promoting local investors helps retain profits and increase rates of re-investment in the country
  - Overall impact of dis-incentivizing local entrepreneurs extends beyond the industry to job creation, employment rates, consumer and business confidence

    Major long-term financial repercussions can result

Recommendation: Develop consistent medium-long-term policy shielded from political changes

USD
400
350
300
250
200
150
100
50
0
2/1/2004
12/1/2004
10/1/2005
8/1/2006
6/1/2007
4/1/2008
2/1/2009
12/1/2009
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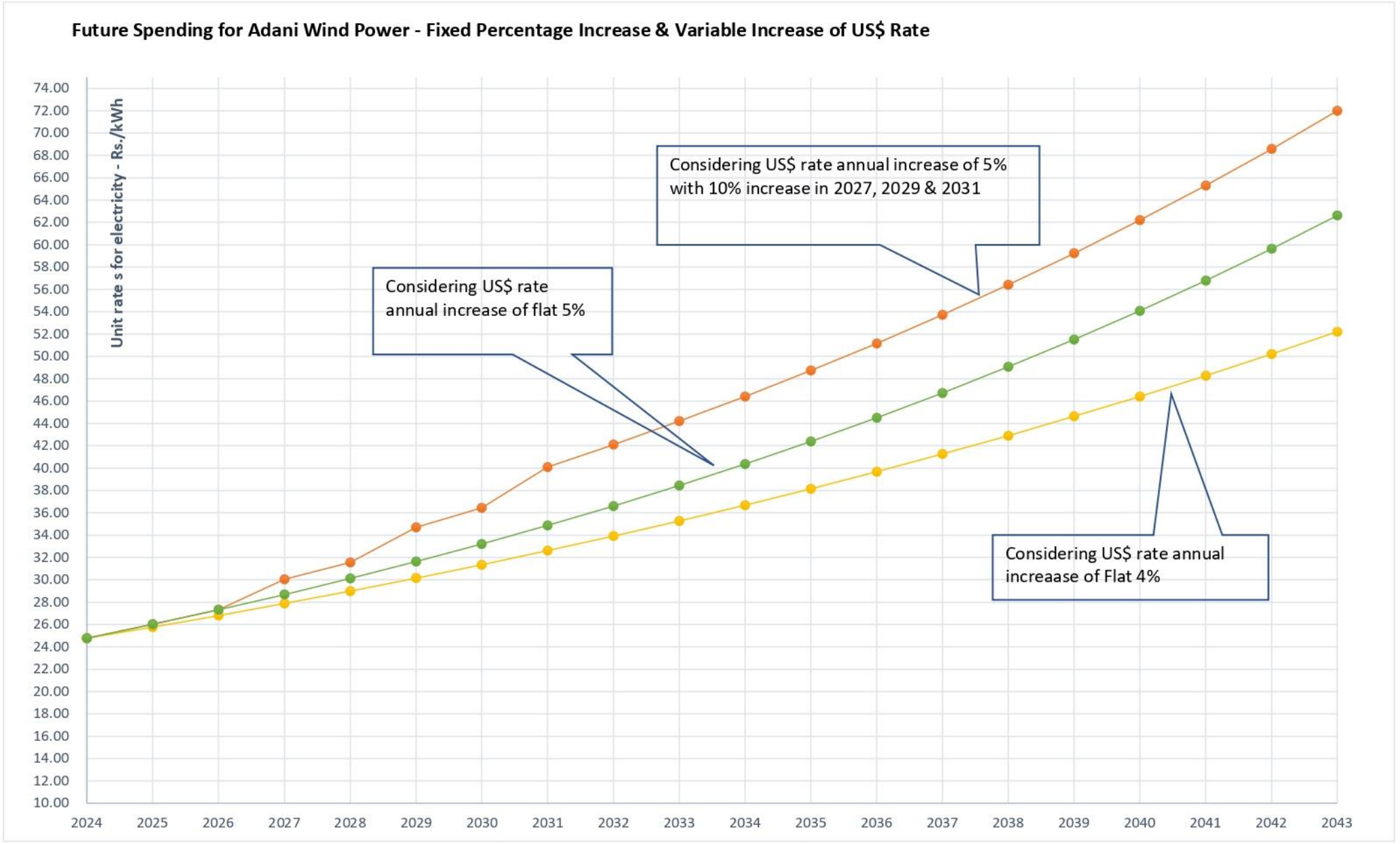
Future Spending for Adani Wind Power - Fixed Percentage Increase & Variable Increase of US$ Rate
Unit rate s for electricity - Rs./kWh
74.00
72.00
70.00
68.00
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64.00
62.00
60.00
58.00
56.00
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Considering US$ rate annual increase of 5% with 10% increase in 2027, 2029 & 2031
Considering US$ rate annual increase of flat 5%
Considering US$ rate annual increaase of Flat 4%

Other Issues

- Storage still expensive
  - Storage necessary due to intermittent nature of power sources
  - Battery and pump storage to address this issue
- Need for thorough environmental analysis
  - Environmental concerns especially for wind energy – can have severe long-term impact
- One stop shop for approvals – SEA mandate disregarded
  - NCRE projects require approvals from numerous state agencies though the SEA Act grants these powers to the SEA

The National Chamber of Commerce of Sri Lanka

Thank you