

# Policy Development towards Energy Efficiency: the Sri Lanka's Approach

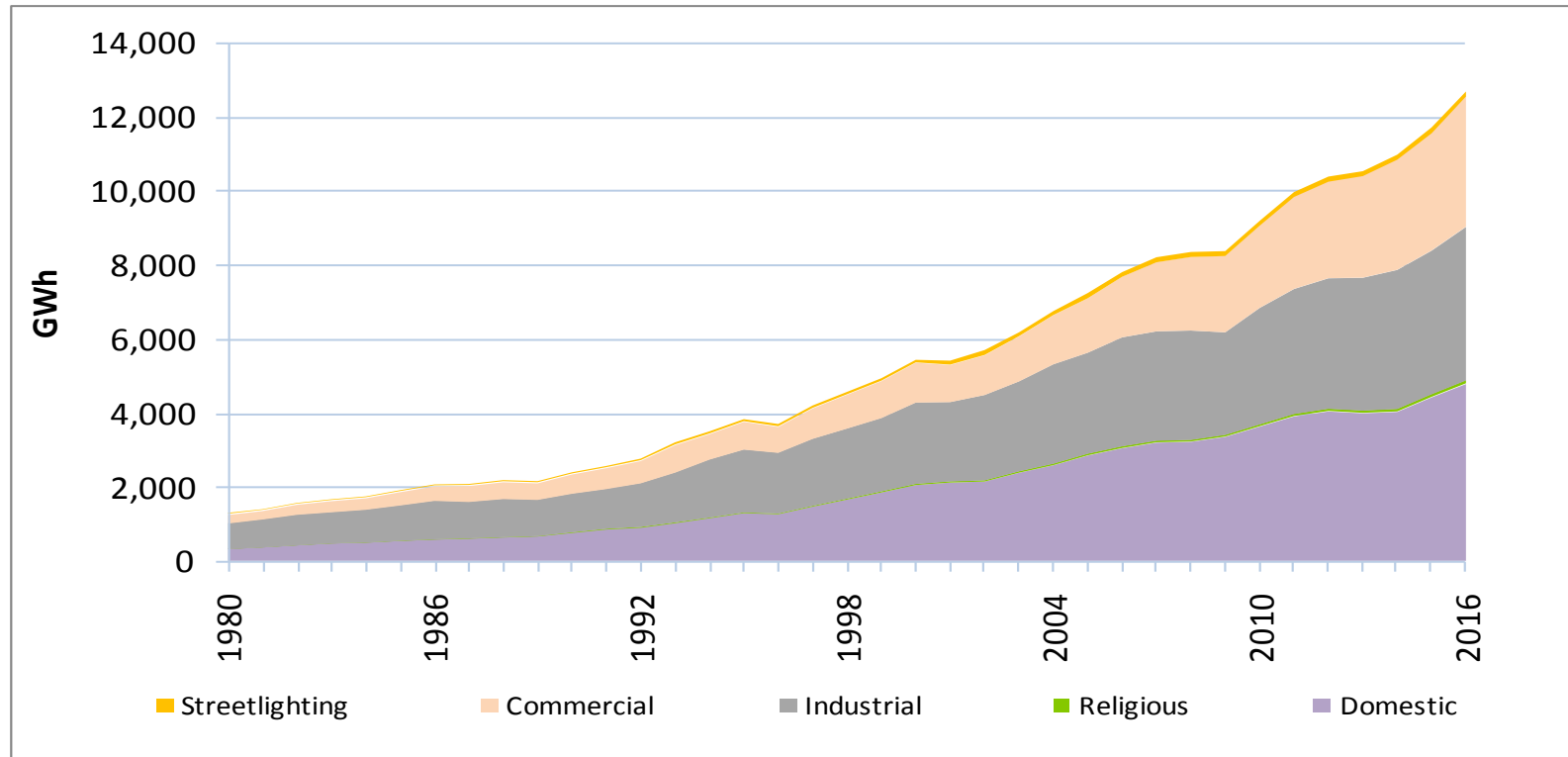
**Eng. Ranjith Sepala**  
**Director General**

**Sri Lanka Sustainable Energy Authority**

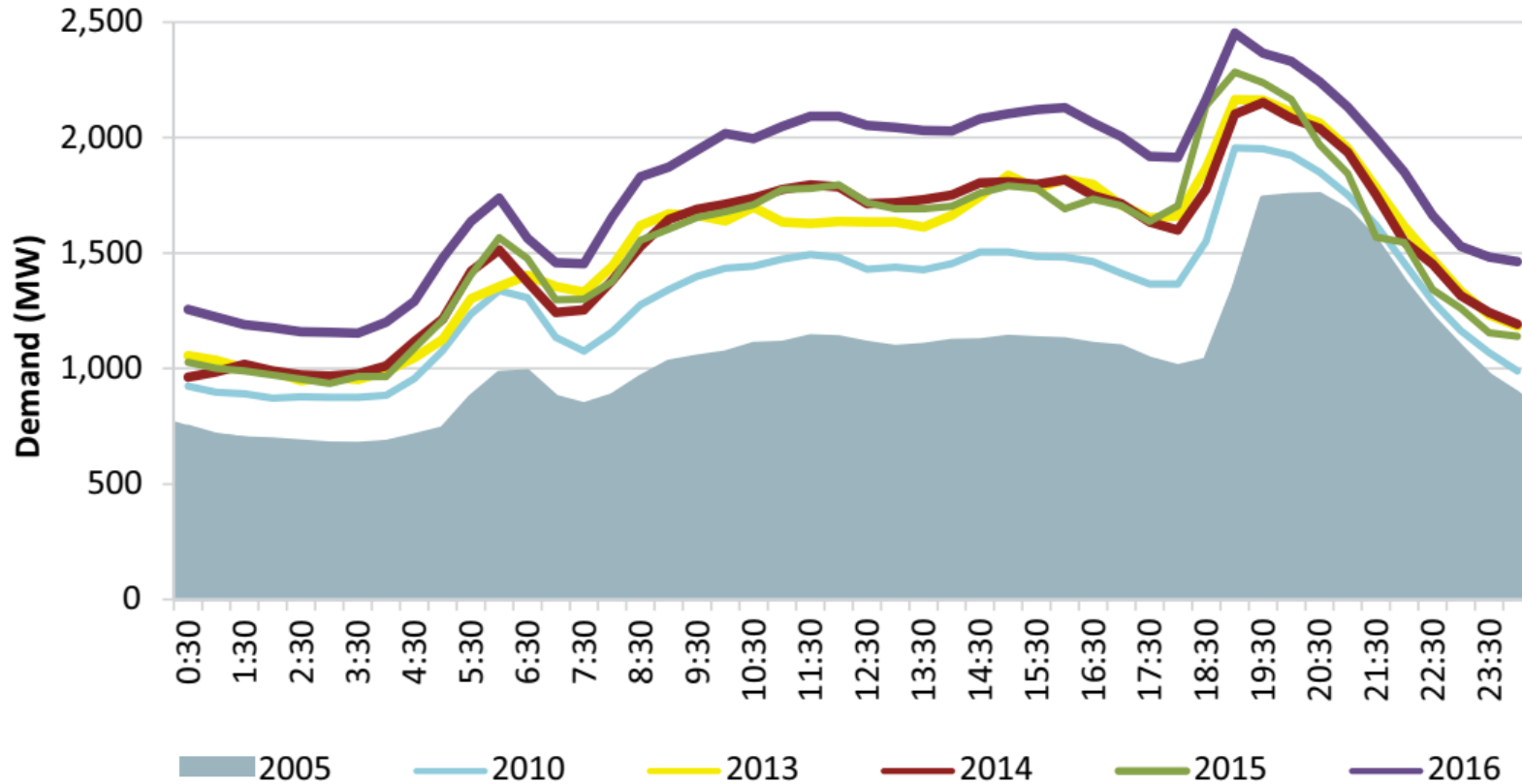
# Outline

- Energy demand growth and case for DSM
- Energy policy and legislation available
- Different approaches to EEI&C markets
- Barrier removal through a package of measures
- Front runner programmes under the task force
- Where we need support

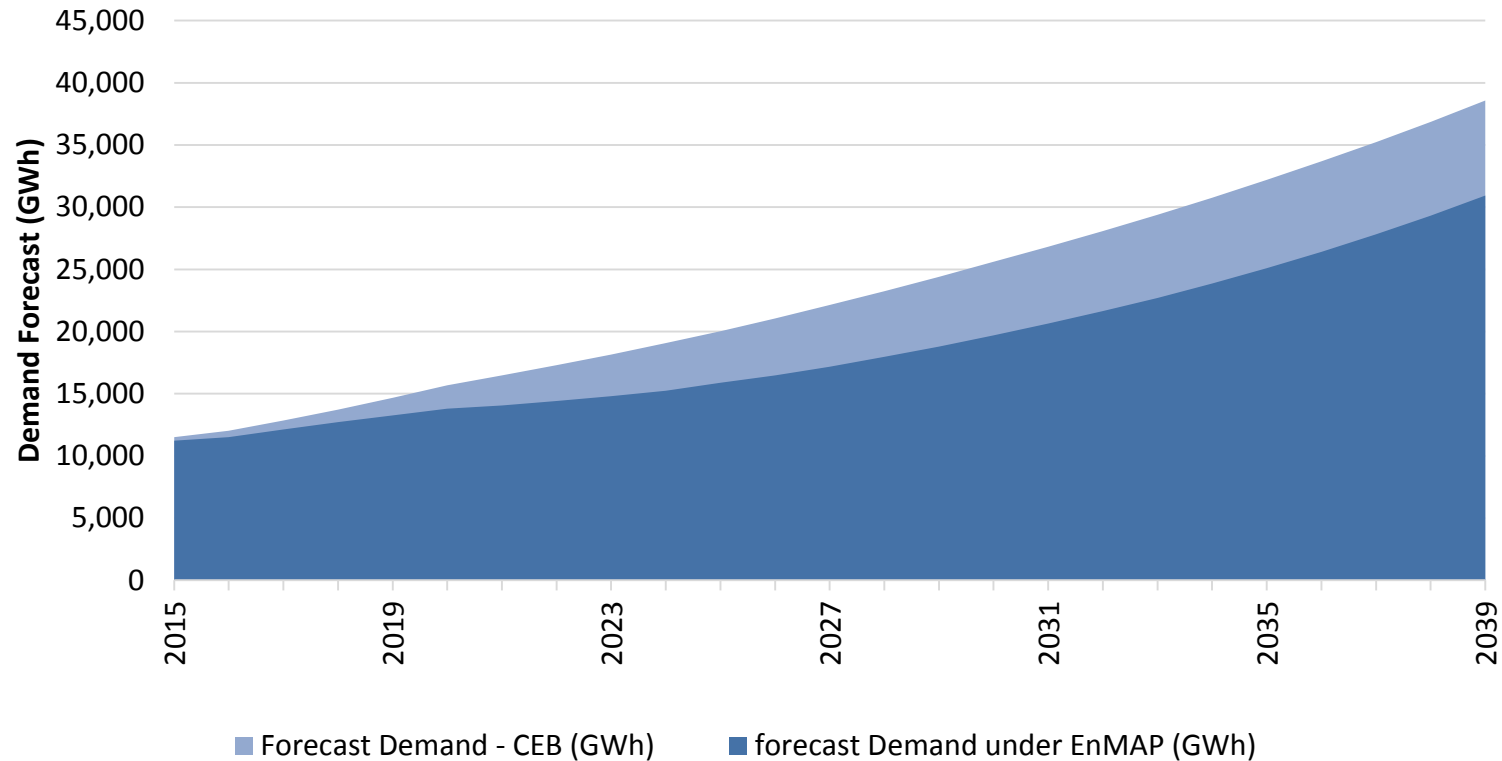
# Electricity Demand Growth



# Changing Demand Profile



# DSM Case of the LTGEP – the Least Cost Case



# A Strong Case for a Sustainable Energy Future

Demand Sector	2015	<b>2030 BAU</b>	<b>2030 SES</b>
Industry	95	379	189
Transport	107	430	143
Households / Commercial	171	683	228
Total Primary Energy Supply	373	1,491	560
Per capita energy GJ/year	23	<b>83</b>	<b>31</b>

*Note: BAU – Business as Usual,  
SES – Sustainable Energy Scenario*

# Energy Policy Development

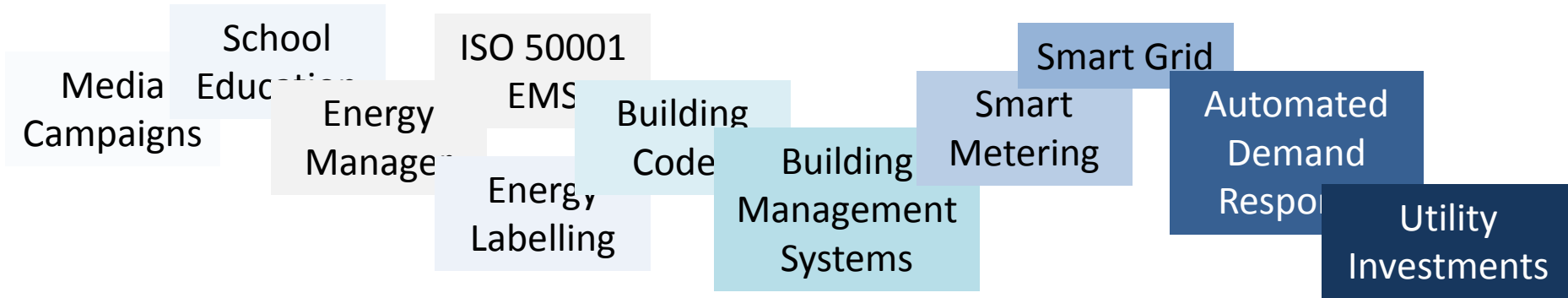
1. Assuring **Energy Security**
2. Providing Access to Energy Services
3. Providing Energy Services at the **Optimum Cost** to the National Economy
4. Improving **Energy Efficiency** and Conservation
5. Enhancing **Self Reliance**
6. Caring for the **Environment**
7. Enhancing the Share of Renewable Energy
8. Strengthening the Governance in the Energy Sector
9. Securing Future Energy Infrastructure
10. Providing Opportunities for **Innovation and Entrepreneurship**

# Legislation in Place

- Provisions in the Sri Lanka Sustainable Energy Authority Act
  - Monitor energy use in facilities / industries
  - Appoint Energy Managers, conduct programmes and examinations
  - Bench mark energy usage and prohibit excess use
  - Building codes for new buildings and retrofits
  - Appliance labelling and imposing MEPS
  - Carry out coordinated R&D with industry / research agencies
  - Identify and deploy efficiency technologies and systems
  - Improve all aspects of EEI&C
  - Recommend policies to government



# Hard and Soft Interventions



Easy to implement

Low cost

Low response

Low returns

Difficult to implement

High cost

Certain response

Predictable returns

SOFT

HARD

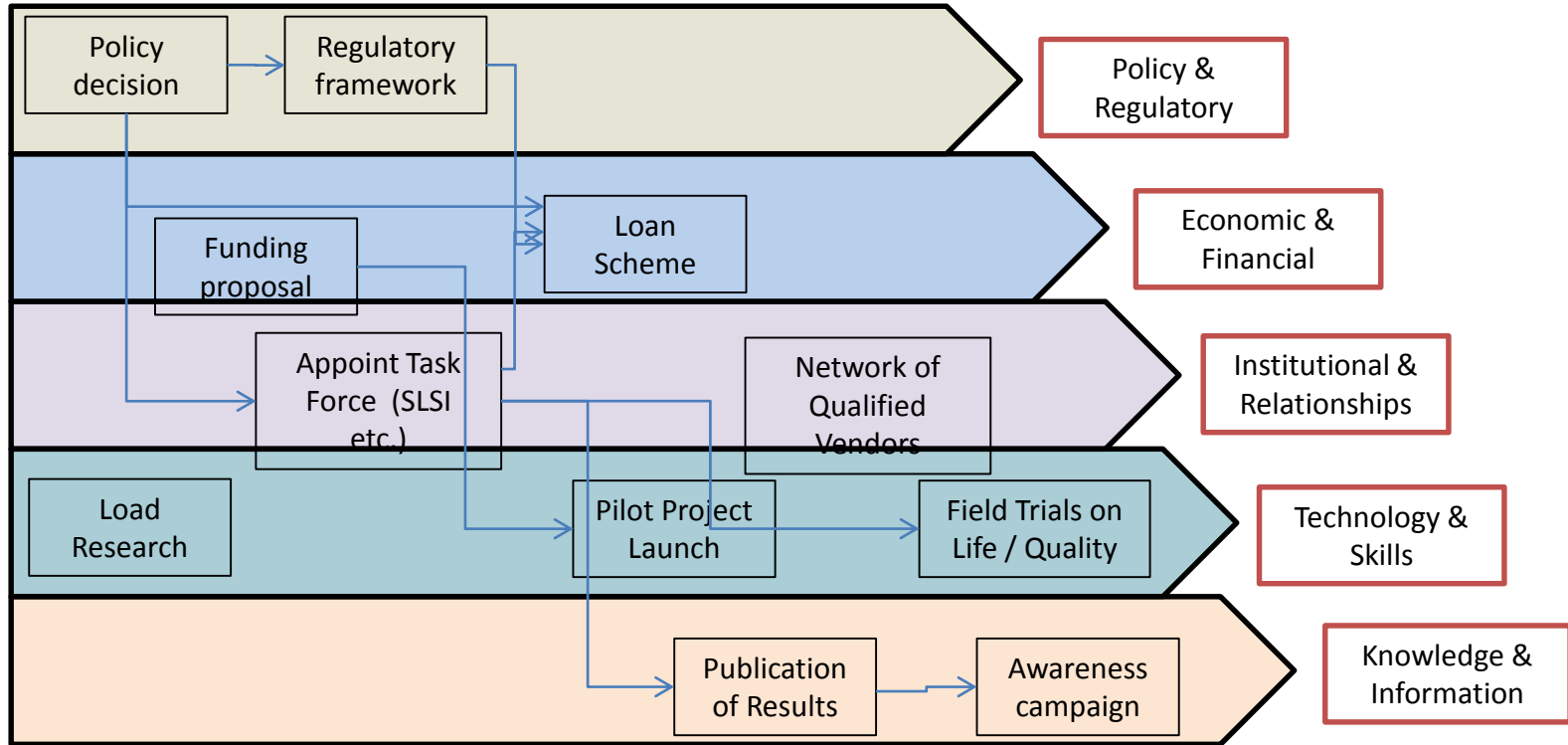
# Sri Lanka's Approach

- Too many things to realise EEI&C benefits
  - Carry out an elimination process (ease of implementation, investment required etc.)
- Identify market potential and realisable size
  - Also the input resources required
- Identify barriers to implementation
  - Core issues which kept the market in embryonic state

# Innovation in Operation DSM Programme

- Most market transformation programmes fail because the efforts are biased
  - Addressing mostly the economic and financial barriers
  - Capacity to implement – the most forgotten element
  - Different segments of the market need different interventions
- We designed ‘packages of measures’ for each market transformation
  - Knowing barriers well (five fold barrier analysis)

# Overcoming Barriers – Deploying CFL



# Ten Thrust areas

	<b>Technology Intervention</b>	<b>Annual Saving (GWh)</b>
1	Efficient Air Conditioning (Commercial, Industrial, Government)	84
2	Efficient Lighting (Government, Commercial, Industrial)	250
3	Efficient Refrigerators (Domestic)	161
4	Efficient chillers (Industrial, Commercial, Government)	41
5	Efficient Motors & VSDs (Tea Sector)	86
6	Eliminating Incandescent Lamps (Domestic)	139
7	Efficient Fans	298
8	Green Building (Commercial, Industrial)	43
9	Smart Home (Domestic)	139
10	Power Factor Improvement	100MVA demand
	<b>Total</b>	<b>1,243</b>

# LED Dissemination scheme

- Distribution of 10 million 9W LEDs among 3.9million households on a 2 year loan
  - They have no financial benefits to buy efficient lamps
  - Only Government and utility have reasons (also can afford a bulk purchase)
  - Aiming to disrupt LED market (60-70% price reduction expected)
- 0-30 units customers can get 2 no of bulbs, whereas 3,4 bulbs for 31-60, 61-90 units customers respectively
- If 60W IFLs are replaced with 9W LEDs
  - Peak demand will be reduced by 304 MW
  - Saving 432 GWh
  - 297,907 t CO<sub>2</sub> annually

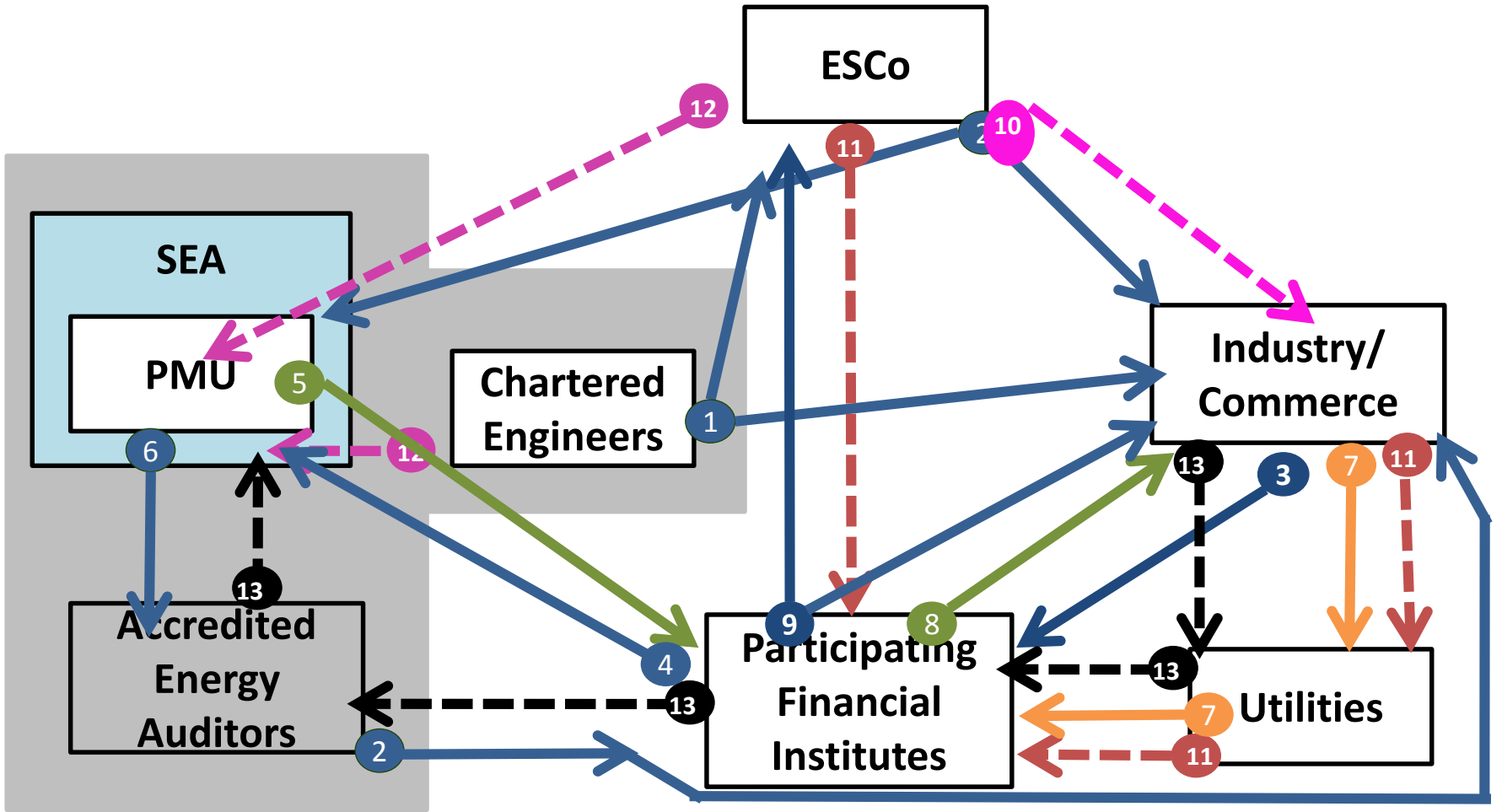
# Phasing out Inefficient Refrigerators in Sri Lanka

- Refrigerators, being a high value item, will seldom be replaced in time
  - Large number of old units in operation
- 190 litres and 240 litres Refrigerators which are more than 10 years old will be replaced by efficient refrigerators
- If 100,000 refrigerators will be replaced annually, for five years,
  - 169 GWh can be saved annually
- Replacement will take place through vendors and bank/ financing institutes. A customer can purchase a refrigerator of his preference, and it's value will be deducted from the electricity bill, for five years

# Efficient Chillers

- Similar to refrigerators, large number in operation, no incentive to replace by facility owners
  - Tenants are paying for excess energy use
- Provide a hassle free replacement programme
  - Not only chillers, but all associated systems
- Complex transaction involved
  - Hence the support of a third party expertise build in to programme





# Presidential Task Force on Energy DSM

- Set up to speed up the energy demand side activities in the country **which would defer the addition of 500 MW** power plants to the national grid in five years' time
- An **inter-ministerial task force** headed by Minister of power and renewable energy, convened by the Secretary of Ministry of Power and Renewable energy
- This programme envisages driving a **LKR 120 billion** investments in energy efficiency and conservation during the next five years, resulting in **energy savings worth LKR 16 billion per annum**
- These interventions will collectively realise a saving of **1,243 GWh by 2020**

# An Energy Conscious Nation

- Changing attitude of future generation
- Targeting women
  - They run the household economy
  - Thrift is their nature
- Training technical staff
- Rewarding achievements

# Training and Awareness

- ❑ **Pre School teacher** training programmes.
- ❑ Energy conservation programs to **Scouts** (14,500) .
- ❑ Workshops for **journalist**
- ❑ School Awareness Programs
- ❑ Public Awareness to government Institutions.
- ❑ Programme on **Energy saving Kitchen for O/L students and women.**



# Training and Awareness

- ❑ Training programs for Energy Managers Forum
- ❑ Training programs for the government sector institutions.
- ❑ Motor Rewinding Programme for NVQ qualified motor rewinders
- ❑ Trained NVQ teachers on energy efficient motor rewinding practices

# Rewarding of Achievements

- *'Vidulka'* Energy Efficiency Awarding Ceremony to appreciate the achievements in energy conservation sector organizations, equipment suppliers, manufacturers, innovators and academia to promote products and services related to energy conservation.
- 2018 “vidulka” scheduled on 17,18,19 August



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# Where we need support

- We have a sizable portfolio of loans lined up for the ten thrust areas
- Some of the areas need strong technical assistance
  - Energy Efficiency Building Code (mandatory)
  - Industrial and commercial retrofits
- Appliance labeling programme
- We are counting heavily on **ADB**





Thank you..!