Transforming Solar Dreams into Reality in India – Sharing the Experience

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Solar Energy is Rocking and Marching Ahead Globally
India is already amongst top 10 solar countries in the world

- China
- USA
- Japan
- Germany
- India
- Italy
- UK
- Australia
- Spain
- France

Country wise solar Capacities (GW)
India's Growth in Installed Solar Capacity (MW)
LARGE UNTAPPED POTENTIAL FOR RENEWABLE ENERGY IN INDIA

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World Gujarati Conference
New Jersey, USA
2nd September 2006
DREAMS

- Dreams can be a Sudden Flash, Out of Blue, an Intuition

- Dreams also can relate to Past Experience, Future Apprehension

- Solar Dreams have the backdrop of Global Warming and Climate Change – Montreal Protocol, 1992

- Crude prices touched $140 – 150 in late 2006

Build up to the Solar Dreams

▪ The Year 2006 was important for Solar Dreams in India.

▪ In April, 2006 Dr. APJ Abdul Kalam, the then President of India, emphasized Solar Energy whilst inaugurating the World Renewable Energy Conference at New Delhi – setting the Solar Energy Generation Target at 50,000 MW.

▪ In August, 2006, the Integrated Energy Policy Document was released by the Planning Commission of India.

▪ In September, 2006, at the World Gujarati Conference at New Jersey, USA, I had the occasion to highlight the potential of Solar Energy for India.

▪ Late 2006, Crude prices touched $140 – 150 per barrel.
Period 2006 - 2008

- First ever “Solar India 2007” conference at Bangalore organized by WISE, Pune.
- Dr. Hermann Sheer, world leader and authority on solar power was the Keynote speaker.
- During the conference, we lamented the fact that India was at Zero Mega Watt despite plenty of Solar Radiation.
- Independent studies by reputed agencies were carried out for MNRE.
- First MNRE Policy in February 2008.
- The policy offered Rs. 12/kwh to developers.
The first MNRE policy of 2008 was restricted to first 50 MW solar capacity.

We felt that it was too low a capacity for the size of India. Govt. of India said - let the proposals come and then we can plan further.

This initial policy triggered considerable interest in the country and proposals of over 6800 MW were received against this restricted capacity of 50 MW.

This first MNRE policy of 2008 also triggered a war of incentives amongst various states of India.
Accordingly Rajasthan, Punjab, West Bengal and Gujarat states came out with their own policies.

Gujarat stole the march by its first ever Gujarat Solar Policy 2009 declared in January, 2009 – which will be covered separately later in this presentation.

In other words, the first MNRE policy unleashed a huge solar potential of the country.
These events formed the basis and further led to the ambitious Jawaharlal Nehru National Solar Mission in AT THAT TIME IN 2010 – WHICH ENVISAGED A NATIONAL TARGET OF 20 GW BY 2022
Off-Grid: Targets/Thrust Areas

Target: 800 MW

Thrust areas:

- ENERGY ACCESS, DIESEL REPLACEMENT
- TELECOM TOWER
- COOLING, COLD STORAGE
- WATER PURIFICATION
- SPACE HEATING
- WATER PUMPING
- NEW INNOVATIVE PRODUCTS
Thrust areas for Phase-II

- Scaling Up of Grid Connected Projects
- Grid Connected & Off-Grid Rooftop Projects
- Off-Grid projects
- Hybrid Systems
- Expanding existing Manufacturing Capacities
- Focused Research & Development
Thrust Areas Phase – 2 contd...

- Solar Resource Monitoring & Assessment
- Financing
- Human Resource Development
- Development of Solar Parks
Separate Targets for other applications

- Rooftop PV Programme – 1000 MW
- Energy Access – 20,000 (Villages/hamlets/basti/padas)
- Off-Grid Lighting Systems – 10 lakhs
- Solar Cities – 75
- Solar Water pumps – 25,000 Systems
- Telecom Towers – 25,000 Systems
- Solar Water Heating Systems – 8 Million Sq.m of Collector area
- Solar Cooker & Steam Generating Systems – 50,000 Systems
- Industrial Process heat application – 400, 250 Sq.m each on an average
- Manufacturing – 4/5 GW Capacity
- Human Resource Development – 1 Lakh trained & Specialized personnel
- Solar Parks (250 MW capacity and Land area of 600 hectare) – 5 Nos.
- Hybrid Systems

Implementing Agency: Solar Energy Corporation of India (SECI)
SUCCESS STORY
Solar Success Story of Gujarat State

- As was mentioned earlier Gujarat State in India stole the march by its first ever Gujarat Solar Policy 2009 declared in January, 2009

- This Gujarat Policy and later the GERC order of January, 2010 offered a very attractive Feed In Tariff of Rs. 15/kwh for the first 12 years and Rs. 5/kwh for the next 13 years
**Gujarat Solar Park**

- The Govt. of Gujarat did not rest content with just announcing the policy – but followed it up by many enabling and proactive initiatives.

- Asia’s as well as the country’s first ever Solar Park was planned and executed by the GOG in record time at Village Charanka, Dist. Patan – bordering the Rann of Kutch.

- This Park which was developed simultaneously with the implementation of the Solar Projects consists of 2000 Hectares of land with infrastructure for 500 MW of Solar capacity at a single location.
Some views of the Solar Park
TRIALS AND
TRIBULATIONS
Main Road leading to Solar Park after heavy rains
Water Logging at Project Site after heavy rains

Dated: 06 Sep 2011
Triumph
Successful Commissioning

- Despite the difficulties and challenges faced, ultimately success was achieved and a total capacity of 605 MW was commissioned by March, 2012 and was dedicated to the nation by the Chief Minister of Gujarat on 19th April, 2012.
View of Successfully Completed Projects at Gujarat Solar Park
View of Successfully Completed Projects at Gujarat Solar Park
View of Gujarat Solar Park
View of Gujarat Solar Park
Success Attributed to

- The success of 629 MW of Solar Power in 15 months can be attributed to:
  - Excellent Enabling provisions of Gujarat solar Policy 2009 and Proactive role of the State Govt.
  - Whole hearted support received from the GOG agencies like GEDA, GUVNL, GPCL, GETCO etc.
  - Solar Developers bringing large investment of Rs. 10,000 Cr [2.0 Bn], state of art technologies, undertaking risk, and making all out effort pulling no stops in meting the deadline
Further Scaling up

- Solar Growth on Four pillars
- Volume
- Spread
- Technology
- Infrastructure and Affordable Finance
- Reverse Bidding or competitive Bidding has helped significantly in lowering the costs and in growth momentum
India's Growth in Installed Solar Capacity (MW)
NATIONAL SOLAR ENERGY FEDERATION OF INDIA

NSEFI

MAKING SOLAR ENERGY AFFORDABLE

LET US JOIN HANDS TO SAVE THE PLANET
Global Solar Council launched at Paris during UN COP – 21 December 2015
• **The Global Solar Council’s vision is to ensure that solar energy is the leading contributor to the world’s energy system.**

• **Our mission is to encourage the rapid and wide-scale adoption of solar energy through cooperation, education and training.**

• **To achieve this mission, we will develop a series of actionable policy recommendations for high-level decision makers.**
Founding Corporate Members

- ABB
- Canadian Solar
- enel
- e.on
- JA Solar
- REC
- RWE
- Jinko Solar
- solar edge
- Unilever
- Wacker
- WAAREE
The overarching objective of the ISA is to create a collaborative platform for increased deployment of solar energy technologies to enhance energy security & sustainable development; improve access to energy and opportunities for better livelihoods in rural and remote areas and to increase the standard of living.

One hundred twenty one (121) prospective member countries.

Global Solar Council works in a complimentary manner with the ISA.

Chairman Elect GSC, Pranav R Mehta actively involved in ISA activities

He recently coordinated the ISA Project Signing ceremony at Abu Dhabi on 17 January, 2018 in the presence of several Energy Ministers from across the world during the WFES event – on behalf of the Global Solar Council
International Renewable Energy Agency (IRENA) Coalition for Action

• Communicate clear messages on renewable energy with the public and decision makers around the world through a wide range of channels, including web portals, media articles, publications, social networks and public dialogue.

• IRENA has 145 Member countries and 31 countries have started the formal process of becoming Members.

• Bruce Douglas, Member, Coalition for Action Steering Committee.

• John Smirnow, was Chair, Coalition for Action Solar Working Group.
Joining hands worldwide GSC works for global solar growth

Thank You