

## One Sun-One World-One Grid: India's Transformative Initiative for Sustainable Development

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- [Mukul Asher and Amit Soni](#)



India has been taking initiatives to encourage 21<sup>st</sup> century relevant international organizations to locate in India.

Thus, the launch of the International Solar Alliance (ISA) was announced by India's Prime minister Narendra Modi, and then Prime Minister of France, Mr. Francois Hollande on 30th November 2015, at the 21st session of United Nations Climate Change Conference of the Parties (COP-21) in Paris, France. ISA is headquartered at Gurugram, in Haryana, India <sup>1</sup>.

ISA's vision is to make the sun brighter with international cooperation, and its mission is that every home no matter how far away, should have a light at home. The premise is that the renewable energy development, and reducing per unit cost of solar, wind and other renewable sources of energy are critical elements of sustainable development.

All members of the United Nations are eligible to be members. As of end July 2020, 87 countries have fulfilled the requirements of becoming a member of the ISA <sup>2</sup>.

The ISA is to hold First World Solar Technology Summit (WSTS) on 8 September, 2020. India is playing a leading role in organizing this event. Such knowledge-transfer is a key component of Atmanirbhar Bharat.

## **The OSOWOG Initiative**

As ISA becomes more established and expands its reach and scope, the initiation of ‘One- Sun- One World- One- Grid’ (OSOWOG) represents another initiative by India for transformational, sustainable and lower-cost renewable energy for sustainable development.

The OSOWOG project, envisages an inter-connected power transmission grid across nations for the supply of clean energy with the mantra Sun- Never- Sets.

In June 2020, the Ministry of New and Renewable Energy in India initiated a Request for Proposal (RFP) to hire consultants for converting this idea into policy. The project will link as many as 140 countries through a common grid that will be used to transfer solar power. However, this has been put on hold due to Covid-19 pandemic. But once the pandemic is under control the RFP is expected to be pursued.

Envisaging common ownership and sharing of sun, the initiative aims to achieve near zero marginal cost with harmonised distribution of electricity from surplus to deficit countries. This will substantially enhance global energy security, particularly for 700 million people without electricity. It will also help achieve better accessibility and cleaner renewable energy to estimated 2 billion women using non-renewable energy for cooking.

The OSOWOG initiative is expected to positively impact poverty dynamics in India and globally, and is expected to help mitigate water, sanitation, food and other scarcities, thereby helping to address socioeconomic challenges, and enhance environment sustainability.

ISA, the nodal agency of OSOWOG, has targeted the cost of solar power equivalent to be the grid parity i.e. the cost of solar power to be equivalent to the cost of coal. This has subsequently been revised to the kerosene parity i.e. The cost of solar power be not more than the cost incurred by the poor people for the use of kerosene. ISA then targets the marginal cost to be near zero, which is an integral element of the Third Industrial Revolution based on Internet- of -Things. The link to You Tube video<sup>3</sup> explains the Third Industrial revolution and its implications, including for the energy sector.

The OSOWOG initiative is to be pursued in three phases. Phase I interconnects the power deficit regions of Middle East, and Southern Asia. In the second phase, solar and other renewable energy resources rich regions would be interconnected. Phase III would vie for global interconnection of the power transmission grid to achieve the one grid vision.

To access the cost-effective finance and to encourage technology innovation for OSOWOG, India has suggested establishing World Solar Bank (WSB), headquartered in India. India has expressed its desire to be a lead member (taking a 30% stake). The WSB is designed to help set up solar projects in member countries and aims to disperse \$500 billion over 10 years. The setting up of WSB may require a total equity capital of \$10 billion and a paid-up capital of USD 2 billion. This can be leveraged with blended financing and technology collaboration

from the multilateral institutions such as the World bank, and other multilateral development banks

India has already initiated power trade with Bhutan and hydropower project development pact with Nepal. It is also trading electricity with Bangladesh.

In 2019, the Central Electricity Regulatory Authority (CERA) approved new regulations of 'Cross-border electricity trade', thereby making the trade of electricity to neighbouring countries more seamless. This included setting up of nodal agency for bilateral trade of electricity, monitoring and planning by central agencies, and similar technology interface at both ends <sup>4</sup>.

The above discussion suggests that OSOWOG is consistent with basic elements of the Atmanirbhar concept, to increase India's domestic capabilities in the sector, and to strive to obtain knowledge, capital, partnerships, and linkages globally.

### **Challenges**

The **first** challenge is to coordinate such a huge project, and to obtain financing based on economic viability, especially when the underlying technologies are changing rapidly. Would those countries innovating such technologies share them or regard them as their competitive advantage over others? Past experience is not encouraging, especially in this current uncertain global economic and trading environment.

The **second** challenge is that in pursuing OSOWOG goals, economic viability of existing fossil fuel, thermal, coal and other power plans however need to be addressed. This is especially true in India where many generating, distribution, and transmission companies are facing poor financial health for political, regulatory and other reasons.

There are already indications that some states in India are not advancing towards renewable technology as rapidly as feasible for the fear of their energy companies losing customers who are currently paying higher prices. But lower prices of power are a significant competitive factor and constructive competition among the states can help mitigate this tendency.

The **third** challenge is that the existing energy companies will need to be significantly restructured to be consistent with the Third Industrial revolution of Internet-of-Things. There are substantial business and employment opportunities in such a restructuring. But this will require leadership and national goal setting as Germany, for example, has done. Germany has set a target of generating 65% of its power from renewable sources by 2030, from the current 40% <sup>5</sup>.

Germany has promised to transform its electricity supply to 100% renewable energy by 2050. According to German Advisory Council on the Environment (Sachverständigenrat für Umweltfragen, SRU) the conversion of the electricity supply system towards the use of 100% renewable energies by 2050 is possible; these technologies include renewable energy such as

wind, solar, biomass and geothermal energy, nuclear power, and fossil fuel power generation using carbon capture and storage technology <sup>6</sup>. Germany thus has to be a key technology partner in pursuing OSOWOG goals.

Some energy companies in India are taking tentative steps to redefine their operations. In early July 2020, it was reported that Coal India and NCL (National Chemical Laboratory) are planning to develop solar power assets worth 3000 MW, with a project cost of INR 120 billion. (USD 1.6 Billion). Such examples need to be multiplied. A business model more consistent with OSOWOG goals and processes need to be developed by the Indian energy companies. This represents a huge challenge for India.

**Fourth**, the OSOWOG goals involve implementing many projects successfully. The ISA could consider special programs to develop project management skills in India and other countries with current skill-deficit in this area, but with good potential to reduce demand-supply gap.

### **Concluding Remarks**

India has embarked on initiatives to locate 21<sup>st</sup> century relevant multi-country organizations in India, and to play a pro-active role. ISA, OSOWOG, and the World Solar Bank are complementary to each other. They require collaboration with other to attract finance and technology. Germany's leadership in renewable energy could hold lessons in implementing OSOWOG goals. The challenges in pursuing OSOWOG goals, briefly enumerated in the column, however should be addressed.

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3. <https://www.youtube.com/watch?v=QX3M8Ka9vUA&feature=youtu.be>
4. [https://www.business-standard.com/article/current-affairs/one-sun-one-world-one-grid-all-you-need-to-know-about-solar-strategy-120081500417\\_1.html](https://www.business-standard.com/article/current-affairs/one-sun-one-world-one-grid-all-you-need-to-know-about-solar-strategy-120081500417_1.html)Accessed on 28 August 2020,
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6. <https://sustainabledevelopment.un.org/index.php?page=view&type=99&nr=24&menu=1449> - (Accessed on 28 august 2020)