

## Green Tariff - Choice of consumers to procure green power

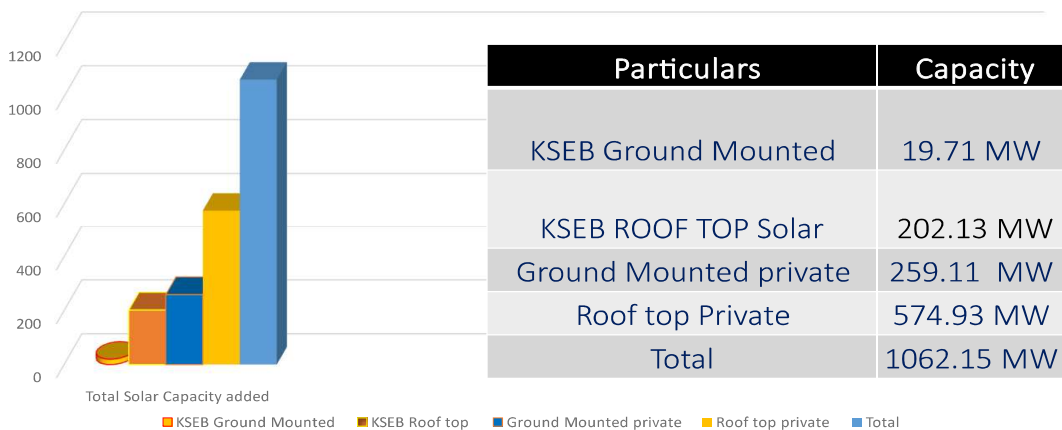
The Government of India has urged state electricity regulatory commissions (SERCs) to adhere to the guidelines outlined in the Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022. The rules were introduced to promote the use of renewable energy (RE) and accelerate the country's RE programs. It has been observed that only a few states like Kerala have determined the Green Tariffs, and these tariffs have been set lower than the average power purchase cost of renewable energy in the state.

### Kerala- RE Rich state status.

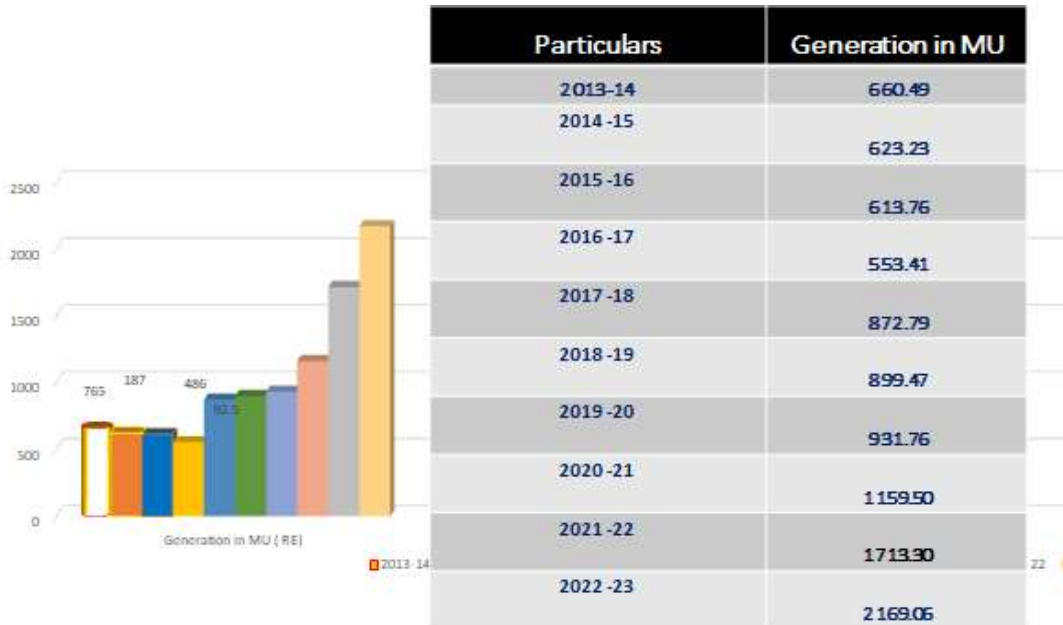
Kerala state has come under genre of RE rich state. RE-rich State' means a State whose combined installed capacity of solar and wind generating stations under the control area of the State is 1000 MW or more. Hence this is a more opportune time for us to develop green tariff concept.

## Total RE Installation( Solar) as on date.

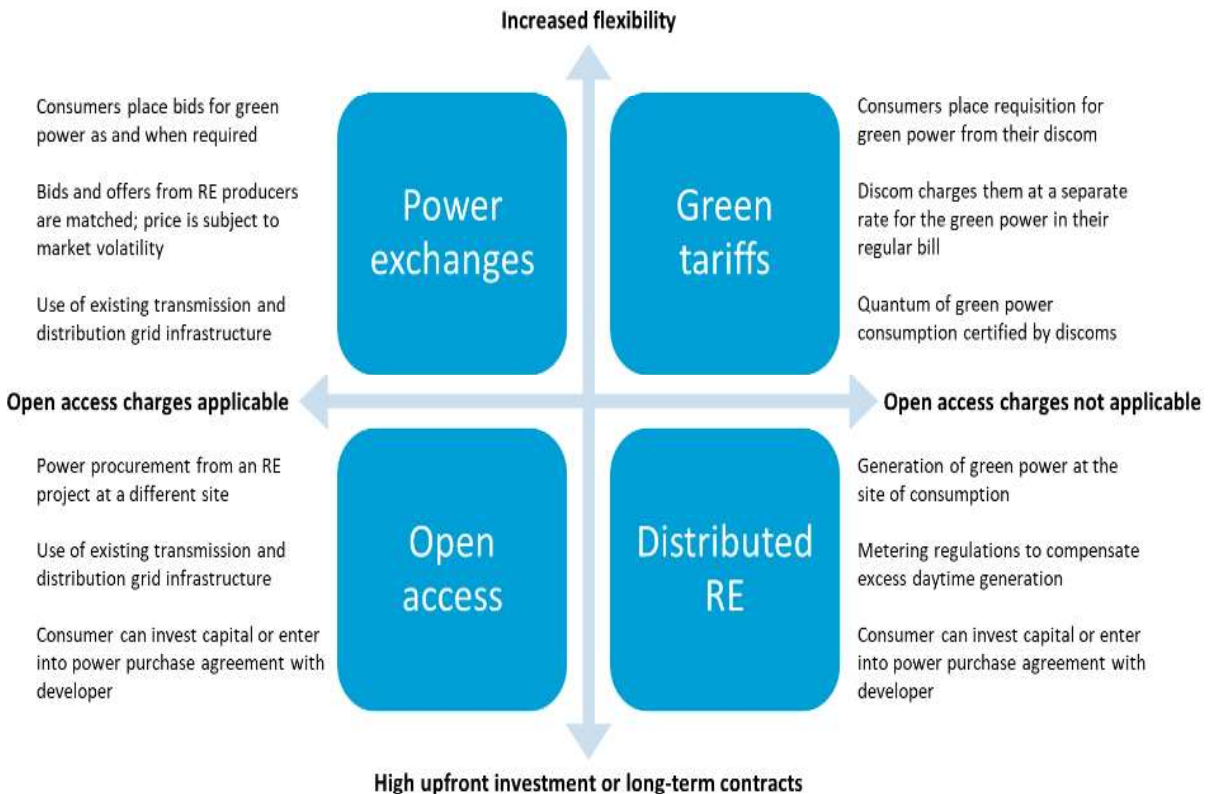
Total solar Installation.



Year on Year table – RE Production in Million Units.



Green power procurement instruments can be categorised under four buckets – power exchanges, **green tariffs**, open access and distributed renewable energy (RE).



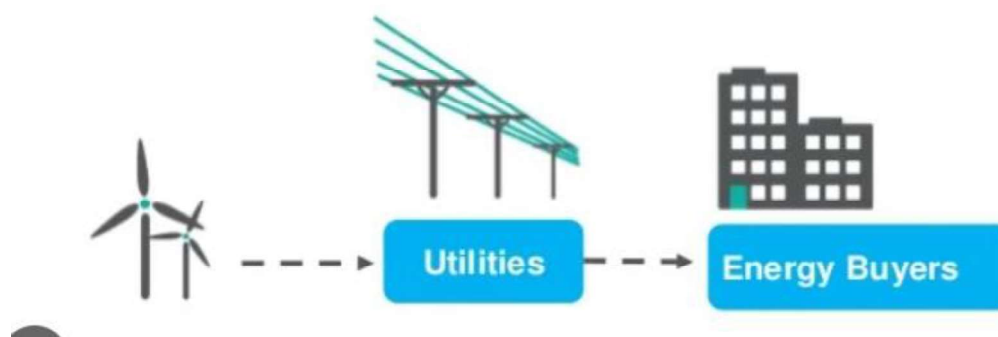
A green tariff typically appertains to a pricing structure or rate plan offered by utility companies for the supply of electricity generated from renewable energy sources. The purpose of a green tariff is to encourage the use and development of clean, environmentally friendly energy sources, such as solar, wind, hydro, and geothermal power. Under a green tariff, consumers can choose to pay a slightly higher rate for their electricity in exchange for knowing that the energy they are using comes from renewable sources. This provides consumers with an option to support sustainable and environmentally friendly practices in the energy sector.

Green tariffs can vary in structure and availability depending on the policies and regulations in a particular region. Some utilities offer green tariffs as part of their standard offerings, while in other cases, consumers may need to actively opt for such plans. The implementation of green tariffs is often seen to promote the transition to a more sustainable and low-carbon energy system by creating a market demand for renewable energy. It allows consumers to align their energy consumption with their environmental values and contributes to the growth of the renewable energy industry.

Under a green tariff, utilities supply the organization with up to 100 percent renewable power from projects either owned by the utility or contracted with independent power producers in the local grid or utility region.

## WHAT IS A GREEN TARIFF?

A utility energy product that replaces a customer's standard resource mix and monthly bill with locally-delivered renewable energy, typically at a fixed price.



### Green Tariffs in India.

Green tariffs were first introduced for high tension (HT) consumers (consumers connected at voltages of 11 kV or above) in Andhra Pradesh in 2008, followed by Karnataka in 2010, Maharashtra in 2021, and Odisha in 2022. Although green tariffs have existed for nearly 15 years, adoption by consumers has been limited. States like Karnataka, Tamil Nadu, Maharashtra, Gujarat, and Rajasthan were offering green tariff options.

Action KSEBL has taken to bring about the Green Tariff:

**Proviso set down by KSEBL for Green Tariff:**



A 'green tariff' of 77 paise per unit over and above the normal tariff for 2023-24.

Kerala Gazette- Green Tariff notifications



**7. Green tariff.**– Rs 0.77/unit over and above the normal tariff.

The consumers voluntarily opting for the purchase of RE power from distribution licensees shall pay green tariff over and above the normal demand charge/fixed charge and energy charge of the respective tariff category in which the consumer belongs to.

**The cost of 0.77 rupees / Unit for Green tariff is arrived as below:**

Additional cost of purchase of Green Power:

Sl No	Particulars	Rate (Rs/ kWh)
1	Average cost of purchase of RE sources for the year 2023-24	3.01
2	Average variable cost of conventional sources approved for the year 2023-24	2.39
3	Additional liability incurred for meeting the entire power requirement from RE sources	0.62

**Green Tariff is arrived as below**

Additional cost of purchase of Green Power- **62 Paise**  
 Weighted average cost Power purchase from RE sources for 23-24- **3.01 Rupees**

Considering the provisions in the KSERC (Renewable Energy Net Metering) Regulations, 2020, the Commission has decided to impose 5% of the cost of RE power as banking charges.

Banking charges- **15 Paise.**  
**Green Tariff = 62 + 15**  
**= 77 Paise**

Weighted average cost of power purchase from RE sources approved for 2023-24		
Source	Quantity (MU)	Cost (Rs. Cr)
Small Hydro	141.71	50.74
Wind	595.80	179.30
Add Nolar	72.18	20.35
Waste to Energy	19.44	12.27
Total Non solar	829.13	262.66
Solar (existing)	324.04	106.87
Solar addl	522.01	138.42
Add solar	66.50	16.23
Sub total solar	912.55	261.53
Total RE power purchase	1741.68	524.19
Solar purchase (%) of total RE	52%	
<b>Weighted average cost of RE power (Rs/ kWh)</b>		<b>3.01</b>

Green tariff approved		
Sl No	Particulars	Rate (Rs/unit)
1	Additional cost of purchase of RE power	0.62
2	Banking charges etc (Rs/ kWh)	0.15
3	Green tariff approved for the year 2023-24	0.77

Cost in other states:

State	Green Tariff (over and above normal tariff)
Tamilnadu	10% over and above the normal tariff (it may range from Rs 0.75/unit to Rs 0.95/unit)
Karnataka	Rs 0.50/unit
Andhra Pradesh	Rs 0.75/unit
Telangana	Rs 0.66/unit
Maharashtra	Rs 0.66/unit
Gujarat	Rs 1.50/unit
Madhya pradesh	Rs 0.79/unit
UP	Rs 0.54/unit
Haryana	Rs 1.00/unit (Solar) & Rs 2.30/unit for non-solar

**Kerala State Electricity Regulatory Commission approves green tariff of 77 paise per unit.**

In May, 2023, the KSEB had submitted a proposal to the commission for allowing green tariff to consumers. The Kerala State Electricity Regulatory Commission has approved a 'green tariff' of 77 paise per unit over and above the normal tariff for 2023-24. The green tariff is payable by consumers voluntarily opting for the purchase of renewable energy power from distribution licensees. This tariff is "over and above the normal demand charge/fixed charge and energy charge of the respective tariff category,"

**Advantages of Green Tariff:**

**Promotes Renewable Energy:** Green tariffs encourage the development and use of renewable energy sources such as wind, solar, hydro, and geothermal power. This helps reduce dependence on fossil fuels and contributes to a more sustainable and environmentally friendly energy mix.

Direct transaction/arrangement between an organization and local utility.



### **Reduces Carbon Footprint:**



Since green tariffs are associated with renewable energy sources that produce lower or zero carbon emissions during electricity generation, they help reduce overall carbon footprint. This is crucial in the global effort to combat climate change.

Enables organizations to maintain and expand existing relations with utility.

### **Fosters Innovation:**



Increased demand for green energy can drive innovation in renewable energy technologies. As more consumers opt for green tariffs, there is a greater incentive for research and development in the renewable energy sector, leading to advancements in efficiency and cost-effectiveness.

A new option for larger electricity customers in regulated markets to help meet their sustainability and renewable energy goals.

### **Corporate Social Responsibility (CSR):**



For businesses, adopting green tariffs aligns with corporate social responsibility goals. It demonstrates a commitment to sustainability and environmental stewardship, enhancing a company's reputation and potentially attracting environmentally conscious consumers.

Price predictability and potential cost savings.

**Market Signal for Renewables:** Green tariffs send a clear market signal to energy producers and investors about the demand for renewable energy. This can lead to increased investment in renewable projects, making them more economically competitive with traditional energy sources. Enables organizations to procure renewable electricity from a project located in the same grid region as their operations.

**Public functions/ Exhibitions/ Biennale/Fair- Green Energy instead of Diesel Generators:**

Public functions/ Exhibitions/ Biennale/Fair are conducted across the state by using temporary power infrastructure at present. KSEBL is on a green initiative to avoid this temporary set up, thereby catering green power from its green reserve.

During the Distribution Utility meet, October 2023- organized by ISGF and hosted by KSEBL the trial run was done.

Green supply in the tune of 2 MW was catered to Huddle Global- 2023 during November -2023 by constructing Plinth/ Line infrastructure with 6 Nos of transformers.

[Standard plinth set up for installing multiple transformers.](#)



Permanent infrastructure as above in identified common and frequent venues of Fair/ Expo venues will be made and the beneficiary can avail Green Power from KSEBL from its Green reserve just by paying Green Tariff, thereby avoiding the cost of temporary infrastructure. This will be a win-win model for Exhibitors and KSEBL.



## **Green Certification:**



This tariff is a premium that comes over and above the normal demand charge/fixed charge and energy charge. 'Green energy patrons' availing themselves of the tariff will be issued a 'green energy certificate' by the KSEB.

The web portal of KSEBL has an online application option leading to Green Channel, where the applications for green certification can be requested on line.

## **Conclusion:**

In conclusion, green tariffs represent a commendable step towards fostering sustainability in the energy sector, with several notable advantages. The benefits extend to corporate social responsibility, energy independence, and potential long-term cost savings. Also, to meet the demand for green energy, KSEB will keep tabs on availability and, if necessary, plan for its procurement. The tariff of 77 paise comprises the additional cost of purchasing renewable energy power (62 paise) and banking charges (15 paise).

However, it is essential to acknowledge the drawbacks and challenges associated with green tariffs.

## **Drawbacks:**

- Green tariff can be more expensive than retail tariff.
- Renewable energy sources like wind and solar are intermittent, meaning their generation fluctuates based on weather conditions. Hence back up may be needed,
- Transition to Green Energy requires huge infrastructure investment.
- Higher initial costs, intermittency issues, infrastructure requirements, and potential disruptions to traditional energy industries are important considerations.
- Additionally, the success of green tariffs is closely tied to supportive policies, consumer awareness, and advancements in technology.

Despite these challenges, the global shift towards sustainable energy solutions is critical for addressing climate change and ensuring a more resilient and environmentally friendly future. Green tariffs play a pivotal role in driving this transition, and ongoing efforts to overcome the drawbacks will be crucial for their continued success.

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