

RAYSTEEDS ENERGY

Delivering excellence for Sustainable Future!



TECHNO-COMMERCIAL PROPOSAL

ROOFTOP GRID CONNECTED SOLAR POWER PLANT

For Residential Buildings and group
Housings.

www.raysteedsenergy.com

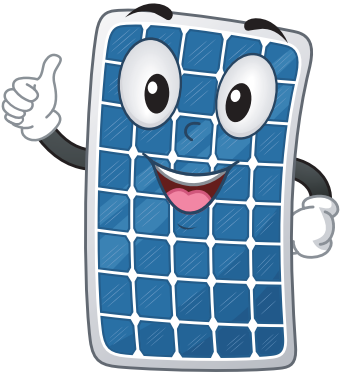


WHAT IS ROOFTOP GRID CONNECTED SOLAR POWER PLANT?

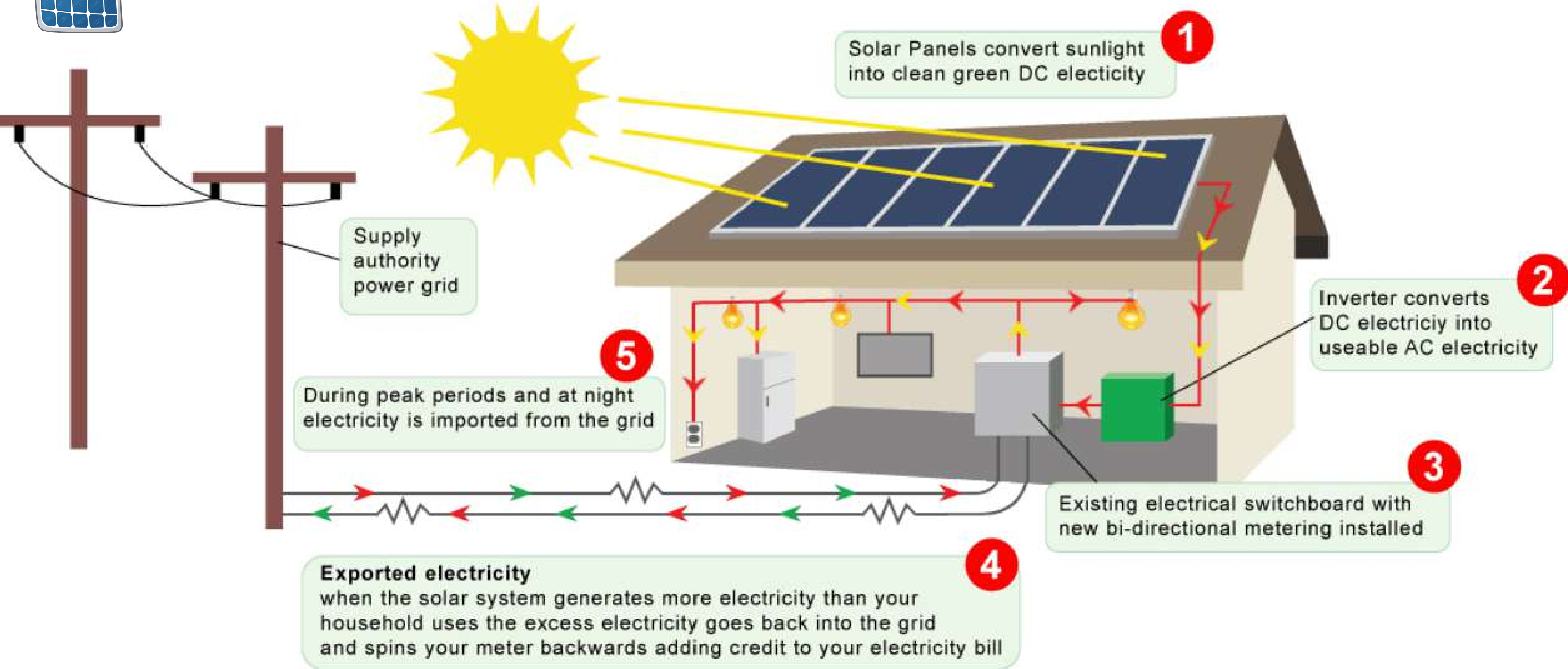
The solar power sector in India has emerged as a fast upcoming section in the last few years. It supports the nation's agenda of sustainable growth, while, emerging as an integral part of the solution to meet the nation's energy needs and an essential player for energy security. India has achieved 4th rank in the world in solar power deployment. As of 30-11-2022, solar projects of a capacity of 61.97 GW have been commissioned in the country. The capacity of 61.97 GW includes 52 GW from ground-mounted solar projects, 7.82 GW from rooftop solar projects, and 2.09 GW from off-grid solar projects. A target of installing 500 GW of grid-connected solar power by 2030 has been kept by the government of India.

An on-grid system is a solar PV system that is connected to the local electricity grid. Unlike an off-grid system. In grid connected rooftop or small solar photovoltaic (SPV) system, the DC power generated from the solar panel is converted to AC power using a power conditioning unit/Inverter and is fed to the grid.





Solar System Explained



Major components of solar power plant

Operating modes of grid-connected rooftop solar PV systems can be explained by understanding its major components.

1. **Solar Panel:** The Solar PV modules/Solar Panels convert solar energy to DC (direct current) electrical energy. solar Panels use light energy that is photons from the Sun to generate electricity through the photovoltaic effect. Mainly two types of solar panels in the Indian market which are polycrystalline and monocrystalline. Multiple panels are connected together to form arrays as per the desired capacity of the system.
2. **Inverter:** The solar inverter is the heart of the PV System. Inverter converts the variable DC output of Solar PV panels into AC power which in turn needs to be converted into acceptable form (AC) to run electrical devices. Inverter also synchronizes with the grid so that generated power from the module can be injected into the grid.
3. **Module mounting structure:** The module mounting structure, is the support structure that holds the Solar PV panels in place for full system life and is exposed to all weather conditions. These are normally fixed at particular angles and orientations in the case of solar rooftop systems.
4. **Bi-direction Meters:** Meters are used to record the generation or consumption of electricity. Bi-direction (or Net-Meters) are used to keep track of the electricity that solar PV system injects into the utility grid and the electricity that is drawn from the utility grid
5. **Balance of System:** These consist of cables, switchboards, junction boxes, earthing systems, circuit breaker, fuses, lightning protection system, etc.



**Rooftop grid-
connected
Solar Plant at
Residential
buildings**



Rooftop grid-connected Solar Plant at Residential buildings



Rooftop grid-connected Solar Plant at Residential buildings



**Rooftop grid-
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Advantages of Rooftop grid connected solar power plant?

- A photovoltaic power system is carbon negative over its lifespan. Long-term energy and ecological security by the reduction in carbon emission. Contribute to a clean and green environment.
- Improvement in the tail-end grid voltages and reduction of system congestion.
- Utilization of available vacant roof space, no additional land required.
- Reduces T&D losses as power consumption and generation are collocated. Save more money with net metering.
- No additional requirement of transmission and distribution (T&D) lines.
- The utility grid is a virtual battery.
- Minimum maintenance of the system.
- The solar system is silent because they don't produce sound hence it doesn't create noise pollution.
- Solar reduces the need for finite sources, unlike other conventional-based power-generating systems.
- Meeting of the Renewable Purchase Obligations (RPOs) of obligated entities.
- Better management of daytime peak loads by DISCOM/ utility.





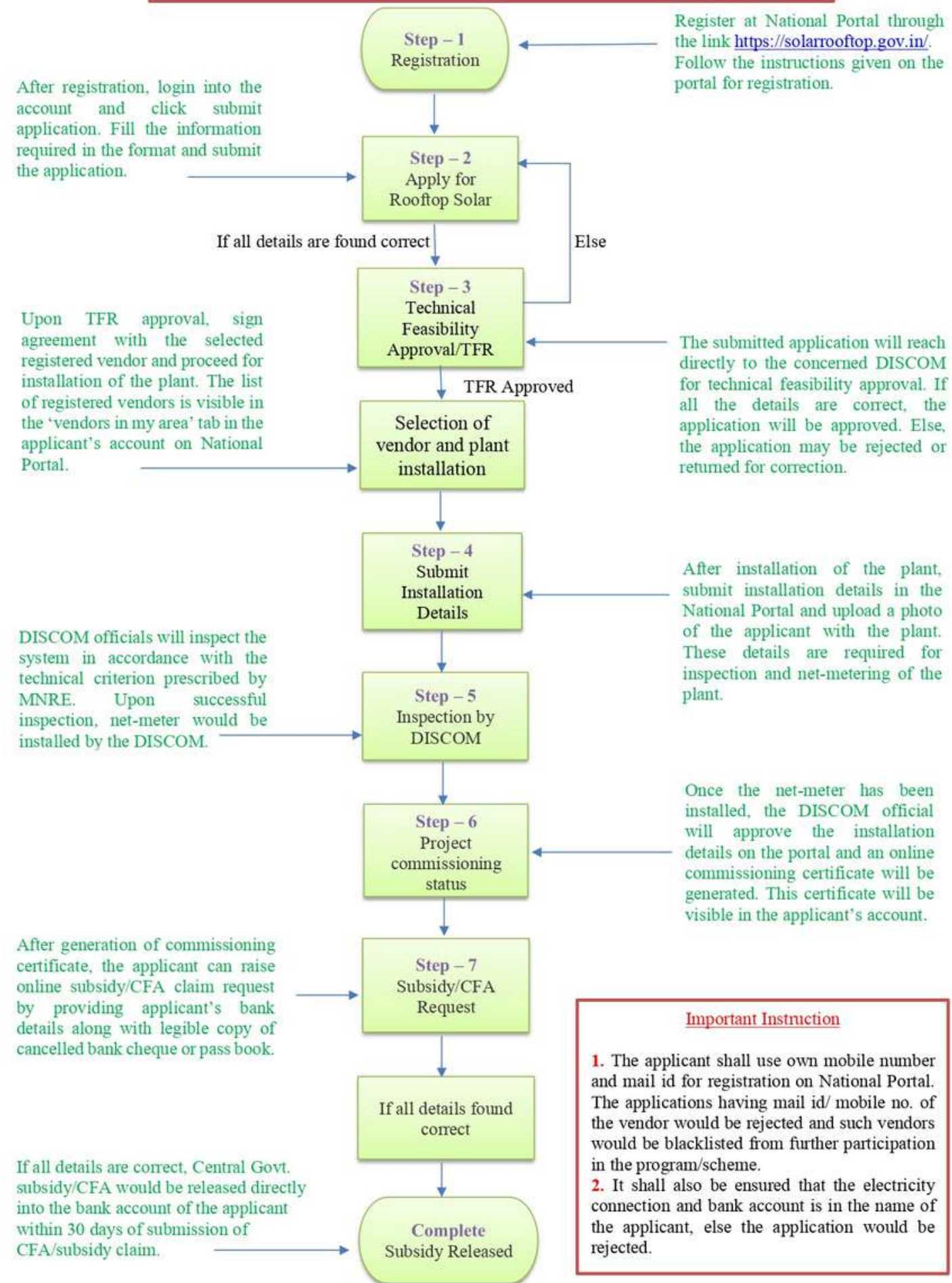
Central Government Subsidy for rooftop solar plant in Special States

- Upto 40 % Subsidy Till 3KW
- Upto 20% Subsidy from 3KW-10KW



Rooftop Solar System Capacity (Lowest of total solar module capacity or solar inverter capacity/ capacity approved by DISCOM)	Applicable Subsidy
3KW	Rs. 17662/- X 3 = Rs. 52,986/-
4KW	Rs. 17662/- X 3 + Rs. 8831/- X 1 = Rs. 61,817/-
5KW	Rs. 17662/- X 3 + Rs. 8831/- X 2 = Rs. 70,648/-
6KW	Rs. 17662/- X 3 + Rs. 8831/- X 3 = Rs. 79,479/-
8KW	Rs. 17662/- X 3 + Rs. 8831/- X 5 = Rs. 97,141/-
10KW	Rs. 17662/- X 3 + Rs. 8831/- X 7 = Rs. 114803/-
15KW	Rs. 114803/-
For Resident Welfare Associations (RWA)/ Group Housing Societies (GHS)	Rs. 8831/- per kW For common facilities up to 500 kWp @ 10 kWp per house, with the upper limit being inclusive of individual rooftop plants already installed by individual residents in that GHS/RWA at the time of installation of RTS for common activity.

Procedure for installation of rooftop solar plant through National

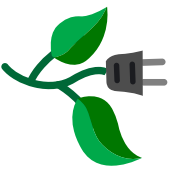
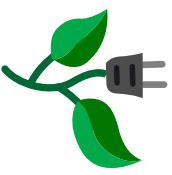
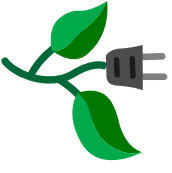

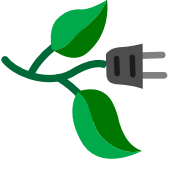


Important Instruction

1. The applicant shall use own mobile number and mail id for registration on National Portal. The applications having mail id/ mobile no. of the vendor would be rejected and such vendors would be blacklisted from further participation in the program/scheme.
2. It shall also be ensured that the electricity connection and bank account is in the name of the applicant, else the application would be rejected.



Why to Install a Rooftop solar power plant at your House?

-  **Reduce or eliminate energy bills.**
-  **Solar is Environment friendly and reduces carbon footprints.**
-  **Very Low Maintenance.**
-  **Utilization of Unused roofspaces.**
-  **Earn Money through the export of Excess electricity to DISCOM.**



Empowering Your Solar Journey: Comprehensive End-to-End Turnkey Solutions

We provide end-to-end turnkey-based services from the first stage to the last stage. We streamline the process for our customers and provide them with a comprehensive solution, making it easier for them to adopt solar energy and realize the benefits of grid-connected solar power plants.



**Project Management
Concultyancy**



Design & Engineering



**Engineering Procurement
& Construction**



**Operation &
Maintenance**

Choosing Raysteeds Energy as your EPC

Partner

Ray-Steeds Energy Private Limited Company is a prominent player in the renewable energy sector. Our company offers cost-effective and highly efficient solutions and consultancy for a wide range of renewable energy projects, including utility-scale solar power plants.



Expertise & Experience

Turnkey Solutions

Quality & Reliability

Customized Solutions

Customer Support

Sustainability & Environmental Impact

**The sun's
power brings
happiness!**



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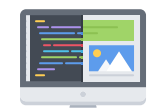
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