

## CSIR-SERC, Chennai Develops Indigenous Emergency Retrieval System (ERS) for Power Lines

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**Council of Scientific and Industrial Research (CSIR) constituent laboratory Structural Engineering Research Centre (SERC) based in Chennai has developed an indigenous technology, Emergency Retrieval System (ERS), for quick retrieval of power transmission in the event of failure of transmission line towers.**

CSIR-SERC has signed an agreement for licensing of the ERS technology with Advait Infratech, Ahmedabad. At present the ERS systems are imported. There are very few manufacturers across the world and the cost is relatively high. This technological development will enable the manufacturing in India for the first time, which will be an import substitute and will cost about 40% of imported systems. ERS has huge market requirement in India as well as in SAARC and African countries. Hence, this technological development is a big leap forward towards Atma Nirbhar Bharat and Make in India.

ERS is a lightweight modular system that is used as temporary support structure to restore power immediately after the collapse of transmission line towers during natural calamities such as cyclone/earthquake, or manmade disruptions. ERS can be assembled quickly at the disaster site for restoration of power in 2-3 days, whereas the permanent restoration may take several weeks. This development is very significant as failure of transmission lines severely impact lives of common people and causes huge monetary loss to the power companies. As the total losses/damages are directly proportional to the outage duration, time is a crucial factor in reinstating or remediating the damaged/fallen structures.

Made of structurally highly stable box sections, ERS is lightweight, modular and reusable. It provides complete solution from member connections up to the foundation for different type of soil conditions. The system is verified through rigorous structural tests. Basic knowledge and tools are enough to assemble and install ERS at the disaster site. Suitable configurations for different voltage-class of transmission line systems are possible. The system is compact and yet provides full functionality on erection. It is designed as a scalable system for 33 to 800 kV class of power lines and can help in building a disaster resilient society.

By Tapas Bhattacharya

# CSIR-SERC develops new emergency response tech

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The Structural Engineering Research Centre (SERC) has developed an indigenous technology — Emergency Retrieval System (ERS) — for quick retrieval of power transmission in the event of failure of transmission line towers.

The Chennai-based constituent laboratory of the Council of Scientific and Industrial Research has signed an agreement for licensing of the ERS technology with Advait Infratech, Ahmedabad. The agreement was signed in the presence of Santosh Kapuria, Director, CSIR-SERC, Chennai and SK Ray Mohapatra, Chief Engineer (PSE & TD), Central Electricity Authority, New Delhi, said a press release from PIB.

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[https://www.thehindubusinessline.com/economy/csir-serc-develops-new-emergency-response-tech/article33096832.ece?utm\\_campaign=amp\\_article\\_share&](https://www.thehindubusinessline.com/economy/csir-serc-develops-new-emergency-response-tech/article33096832.ece?utm_campaign=amp_article_share&)

# Chennai-Based CSIR-SERC Develops Indigenous Emergency Retrieval System For Power Transmission Lines

by *Swarajya Staff* - Nov 14, 2020 01:13 PM



Power Transmission Lines (representative image) (File Photo. Credit: Getty/AFP)

Council of Scientific and Industrial Research's (CSIR) Chennai-based constituent laboratory Structural Engineering Research Centre (SERC) has developed an indigenous technology, Emergency Retrieval System (ERS), for quick retrieval of power transmission in the event of failure of transmission line towers, the Ministry of Science and Technology said in a [statement](#) on Saturday (14 November).

ERS is a lightweight modular system that is used as temporary support structure to restore power immediately after the collapse of transmission line towers during natural calamities such as cyclone, earthquake, or manmade disruptions. ERS can be assembled quickly at the disaster site for restoration of power in 2-3 days, whereas the permanent restoration may take several weeks.

CSIR-SERC has signed an agreement for licensing of the ERS technology with Ahmedabad-based Advait Infratech.

At present, the ERS systems are imported. There are very few manufacturers of these systems across the world and the cost is relatively high.

SERC's technological development will enable the manufacturing of the ERS systems in India for the first time, which will be an import substitute and will cost about 40 per cent of imported systems, the ministry said.

ERS has huge market requirement in India as well as in SAARC and African countries. Hence, this technological development is a big leap forward towards Atma Nirbhar Bharat and Make in India, it added.

This development is very significant as failure of transmission lines severely impact lives of common people and causes huge monetary loss to the power companies. As the total losses and damages are directly proportional to the outage duration, time is a crucial factor in reinstating or remediating the damaged or fallen structures.

Made of structurally highly stable box sections, ERS is lightweight, modular and reusable. It provides complete solution from member connections up to the foundation for different type of soil conditions.

The system is verified through rigorous structural tests. Basic knowledge and tools are enough to assemble and install ERS at the disaster site. Suitable configurations for different voltage-class of transmission line systems are possible.

The system is compact and yet provides full functionality on erection. It is designed as a scalable system for 33 to 800 kV class of power lines and can help in building a disaster resilient society.

<https://swarajyamag.com/insta/chennai-based-csir-serc-develops-indigenous-emergency-retrieval-system-for-power-transmission-lines>

# CSIR-SERC, Chennai Develops Indigenous Emergency Retrieval System (ERS) for Power Lines

By  
India Education Diary Bureau Admin

November 14, 2020



New Delhi: Council of Scientific and Industrial Research (CSIR) constituent laboratory Structural Engineering Research Centre (SERC) based in Chennai has developed an indigenous technology, Emergency Retrieval System (ERS), for quick retrieval of power transmission in the event of failure of transmission line towers. CSIR-SERC has signed an agreement for licensing of the ERS technology with M/s Advait Infratech, Ahmedabad.

At present, the ERS systems are imported. There are very few manufacturers across the world and the cost is relatively high. This technological development will enable the manufacturing in India for the first time, which will be an import substitute and will cost about 40% of imported systems. ERS has huge market requirement in India as well as in SAARC and African countries. Hence, this technological development is a big leap forward towards Atma Nirbhar Bharat and Make in India.

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The agreement was signed in the presence of Prof. Santosh Kapuria, Director, CSIR-SERC, Chennai and Shri S.K. Ray Mohapatra, Chief Engineer (PSE & TD), Central Electricity Authority, New Delhi.

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<https://indiaeducationdiary.in/csir-serc-chennai-develops-indigenous-emergency-retrieval-system-ers-for-power-lines/>



TAMIL NADU

# CSIR-SERC develops structure to help in restoration of power lines

**SPECIAL CORRESPONDENT**

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## 'It is the first time this will be manufactured in India'

Council of Scientific and Industrial Research (CSIR)'s Structural Engineering Research Centre (SERC) has developed a modular, light weight structure that will help in quick restoration of power supply in case of failure of transmission towers.

Santosh Kapuria, director of CSIR-SERC and a member of the team that developed the emergency response system (ERS), explained that it is fabricated using structure-grade aluminium and weighs around two tonnes each.

"When transmission towers get bent or uprooted or damaged due to cyclones or earthquakes, the ERS can be installed in under three days and does not require any major construction to hold it up. Transmission towers that carry high tension lines through vast open spaces across the country, usually take a couple of months to construct and weigh between 25 and 50 tonnes each," he said.

The Chennai-based laboratory recently signed an agreement for licensing of this technology with Advait Infratech, Ahmedabad, which manufactures products related to transmission line utilities including optical fibre ground wires that act as earth wires and internet connectivity.

Shalin Sheth, managing director of Advait, said that usually such structures are imported from countries such as Germany and Canada and they cost a lot. "The structure developed by CSIR-SERC will cost only 40% of such imported material. It can be scaled up to carry power lines from 33 KV to 800 KV. It can be easily assembled, reused, transported and stored," he said. It can also be used as a temporary tower until transmission companies get the right of way for the towers, he added.

CSIR-SERC has signed the agreement with Advait following an expression of interest it called for. "We are ready to transfer this technology to other companies too if they qualify. Though there are a few companies making ERS available worldwide, it is the first time this will be manufactured in India," Mr. Kapuria said.