

Success story:

Tackling network energy consumption

How to save power while
securing network performance



ERICSSON

In collaboration
with

 **ROGERS**

Network traffic and the sustainability challenge

Increasing mobile network usage is creating a sustainability challenge for communications service providers. Ericsson has developed solutions which reduce carbon emissions and save costs, while improving network energy performance.

Delivering 5G without costing the earth

According to the GSMA, the industry organization that represents service providers worldwide, network energy consumption is one of the highest operating costs.¹

This figure is expected to continue rising, given continuing post-pandemic growth in data traffic and rising energy costs. Such is the scale of these pressures, that it is improbable energy costs can be offset completely against the improved efficiencies of 5G.

It is a complex issue, and one that Ericsson is tackling by producing technology that enables the delivery of 5G without costing the earth – literally or figuratively. At the heart of Ericsson's approach is an understanding that there will be an unsustainable rise in the energy consumption of mobile networks if 5G is deployed to meet increasing traffic demands in the same way as previous generations.

A partnership in search of a solution

In common with service providers around the world, Rogers Communications, a leading Canadian technology and media company that operates Canada's largest 5G network,² has been seeing its energy usage rise.

Since 2015, Rogers has experienced a more than 580 percent increase in total traffic, driving up absolute energy consumption considerably, despite a reduction in total energy usage per petabyte of data.

In 2020, Rogers achieved its original target to reduce greenhouse gas emissions by 25 percent from its 2011 base year, 5 years ahead of schedule. In order to ensure continued attainment of its goals, Rogers turned to Ericsson to help it become the first service provider in North America to undertake trials of energy-efficient software solutions as a way of improving its network energy performance.

The challenge

Service providers are experiencing a significant rise in energy consumption, driven by increased network traffic.

The solution

Ericsson's Radio Access Network (RAN) energy-saving software.

The benefits

Ericsson's technology enables service providers to reduce carbon emissions and save costs, while securing network performance.



¹ GSMA | Energy Efficiency: An Overview - Future Networks

² Rogers was ranked first in the umlaut Mobile Data Performance audit in Q2, 2021. Visit [Umlaut: Benchmarking – Canada](#). Largest based on total square kilometers of Rogers 5G coverage compared to published coverage of other national networks.

Sustainability through network power saving

Ericsson supports innovative energy-saving features in 4G, which provide an effective mechanism for network power saving. They provide flexibility to find optimal energy savings, balanced with acceptable traffic performance impact.

More than 75 percent of the energy consumed by service providers comes from Radio Access Networks (RAN). To manage the four-fold traffic increase expected by 2025, while also reducing network energy consumption, Ericsson has created multiple products to address RAN energy efficiency.

As network traffic varies over days and weeks, energy-saving software is key to adjusting capacity to demand by putting equipment, or parts of equipment, into sleep mode when not required. Focusing on software features requires minimal resources, no capital expenditure and yields immediate results in terms of significant reductions in energy usage, decreased carbon emissions, and cost savings.

Energy efficiency software in action

Since 2019, Rogers has been focusing on various innovations to improve the energy efficiency of its network. One such initiative has involved a collaboration between Ericsson and Rogers, which focused on deploying Ericsson's energy-efficiency software features to improve network energy performance.

Rogers defined energy reduction targets for Ericsson to achieve through

deployment of its intelligent RAN energy-saving software features, which are optimized for the Ericsson Radio System. Various combinations of network energy performance features and parameter settings were trialed to determine optimal software feature combinations and settings that maximized power saving without sacrificing network performance.

Multiple scenarios were evaluated simultaneously on different clusters, each of which had the same number of sites. Pre- and post-KPI comparison was undertaken to study the impact of these scenarios on network performance. The scenario with the least impact on performance and the maximum power savings was selected for nationwide roll out.

Reducing emissions and energy costs

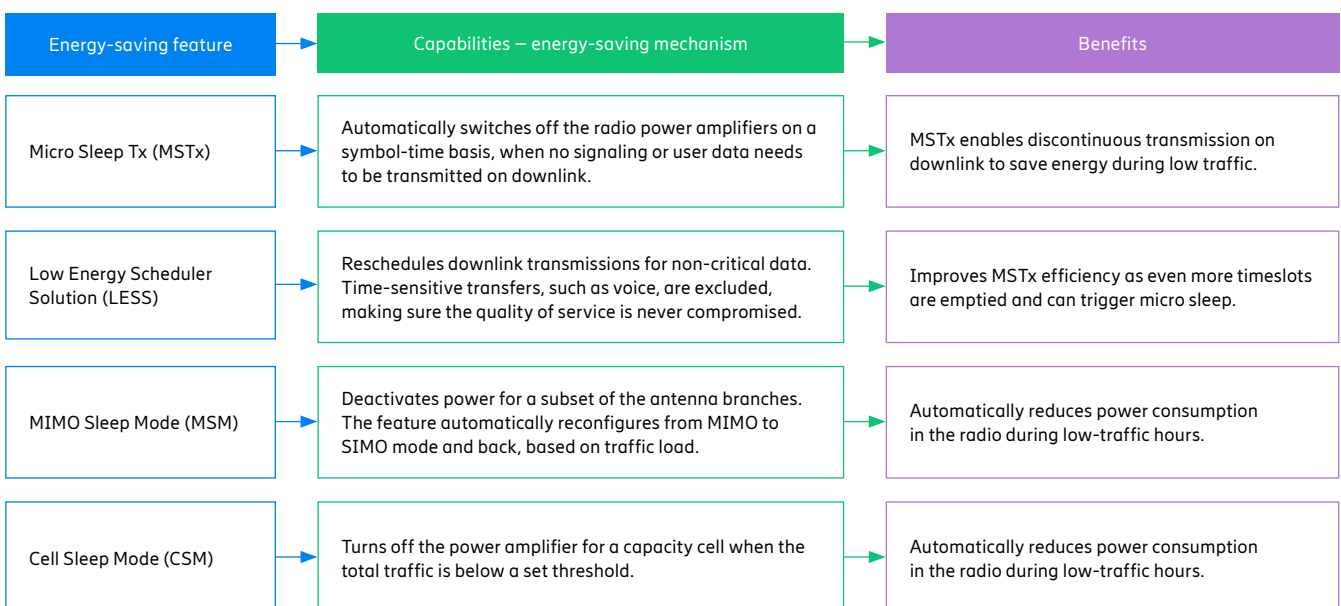
Ericsson's energy-efficient software solutions were deployed across the Rogers network, and the benefits have been significant in terms of both reduced CO2 emissions and energy costs, using Canadian emission factors. With Ericsson, Rogers has saved 25 GWh of power annually, which equates to an estimated reduction of 3,000 metric tonnes of CO2 emissions.

The initiative has been highly successful in providing a solution to the challenge of reducing energy consumption driven by increased network usage. Ericsson and Rogers are now jointly working on defining a road map for further implementation of new energy performance solutions as they become available from Ericsson.

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Annual network power use savings of 25 GWh, resulting in an estimated reduction of 3,000 metric tonnes of CO2 emissions.

Ericsson energy-saving software scenarios in the Rogers trial



About Rogers

Rogers is a leading Canadian technology and media company that provides communications services and entertainment to consumers and businesses. Rogers shares are publicly traded on the Toronto Stock Exchange (TSX: RCI.A and RCI.B) and on the New York Stock Exchange (NYSE: RCI).

www.rogers.com

About Ericsson

Ericsson enables communications service providers and enterprises to capture the full value of connectivity. The company's portfolio spans the following business areas: Networks, Cloud Software and Services, Enterprise Wireless Solutions, Global Communications Platform, and Technologies and New Businesses. It is designed to help our customers go digital, increase efficiency and find new revenue streams. Ericsson's innovation investments have delivered the benefits of mobility and mobile broadband to billions of people globally. Ericsson stock is listed on Nasdaq Stockholm and on Nasdaq New York.

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