

# Weather Normalization Patent Granted for Improved Energy Forecasting

PICTON, ONTARIO, CANADA, October 6, 2020 /EINPresswire.com/ -- [Screaming Power](#) is pleased to announce its breakthrough US Patent has been granted for a new method to normalize and forecast energy use. This method was developed in collaboration with Professor Soosan Beheshti at Ryerson University's Faculty of Engineering and Architectural Science. Research was supported with funding from the Government of Ontario, through OCE,



and the Natural Sciences and Engineering Research Council. Patent preparation was also supported in part through advisory services and research and development funding from the National Research Council of Council of Canada Industrial Research Assistance Program (NRC IRAP). The method was published in Energy Science & Engineering Journal in January 2019. This novel method utilizes new computational models of energy usage and then applies these models to normalize weather and forecast energy usage behaviour.

This new, modern computer-implemented method of weather-normalized energy usage is already in use by Screaming Power for the analysis of commercial and residential buildings. It has proven to be flexible and adjust to multiple use cases. Screaming Power's patent, "Methods and Systems for Energy Use Normalization and Forecasting" introduces Structure Dependent Weather Normalization as an innovative analytical breakthrough to weather normalize and forecast the behaviour of energy usage/loss while taking into consideration temperature, humidity, solar radiation and wind using machine-learning/deep-learning processes that are more resilient to today's extreme weather conditions than existing methods used by the energy industry today.

The innovative process validates and remediates raw energy use data (big data), and then generates an energy use intensity (EUI) value representing energy use by the building structure over a customized time period. The tools developed train our model which are implemented by AI (neural network) using weather information and building information to generate a Structure Dependent Energy Usage/Loss (SDE U/L) Model.

In traditional weather normalization methods, building parameters, such as building size, window size, construction joints, and the effect of flues, are missing as well as the effects of humidity, wind, sun radiation and behavioural usage of building's occupant. The Ryerson research paper presents Structure Dependent Energy Usage/Loss Models that use artificial intelligence to capture and forecast the behaviour of energy consumption/loss (see <https://onlinelibrary.wiley.com/doi/full/10.1002/ese3.272>). It is the basis of this research and Patent that Screaming Power continues to build on today, as they break barriers in managing energy use in buildings for today's ever-changing global climate change dilemma.

Dr. Beheshti, lead researcher, says, "When it comes to energy, it is very important to balance the demand and supply in rapidly changing times. Weather is a key disrupter of our energy use and we need to improve our understanding of its effects. Machine learning and AI are the new path for this type of problem solving."

Ace Sahebalam, head researcher at Screaming and co-inventor on the patent suggests that, "This method is a solid base to develop true cognitive conservation where we use complex analytics to solve day-to-day problems. It is important to appreciate that very few people understand their energy use and how weather patterns affect their usage. This Patent provides us a critical stepping stone that we need to accurately assess costs, energy use and GHGs to solve important energy problems that face us today."

Because of the complexity and diversity in the operation of the mechanical and electrical systems, accounting for the impacts of weather on building energy use, as well as the potential energy savings innovations being added to the building itself, is an extremely exhaustive challenge.

Screaming Power believes energy consumers must understand their energy footprint better. It is the job of the subject matter experts to make this happen in a simple and easy to understand manner. It will help all energy users decide whether true savings are being achieved through energy conservation or other greening efforts.

It is obvious that weather conditions have a substantial effect on energy use and economic activity. It is also well documented that today's climate change makes simple normalization analysis a challenge, as relatively simple existing mathematical formulas become compromised when they are forced to adjust to more adhoc and extreme environmental changes we are now seeing. Adaptable weather normalization that learns over time is an important step in building energy ratings, comparing buildings, and evaluating green generation, retrofits and storage management.

## About Screaming Power

Screaming Power is revolutionizing customer engagement by providing a mobile platform that connects the energy user, allowing for effective and secure two-way communications to educate,

change behaviour and encourage sustainability. Our extensible Intellectual Property provides a low-cost, digital infrastructure for a self-sustaining Eco-System. Our Scream Utility & Scream Enterprise mobile solutions focus on reducing 'cost-to-service' for utilities while driving satisfaction and facilitating the delivery of innovation (e.g., connectivity to the IoTs).

### [About Ryerson University](#)

Ryerson University is Canada's leader in innovative, career-oriented education. Urban, culturally diverse and inclusive, the University is home to more than 46,000 students, including 2,900 Master's and PhD students, 3,800 faculty and staff, and over 200,000 alumni worldwide.

Gary Michor  
Screaming Power Inc  
+1 800-823-8132  
[email us here](#)

---

This press release can be viewed online at: <https://www.einpresswire.com/article/527815699>

EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.

© 1995-2020 IPD Group, Inc. All Right Reserved.