# ECOTENP

## De-Icing Development

### About Us

EcoTEMP is a privately owned company with the ability to bypass the red tape and road-blocks that can be found in larger organizations. EcoTEMP's headquarters are located in Edmonton Alberta, with its manufacturing and R&D facilities in Windsor Ontario, Canada. EcoTEMP's past experiences in various heating applications - including our roots in the antennae de-icing industry in 1992 - has allowed us to enter the wind turbine industry and progress rapidly with minimal input.

A joint development project between EcoTEMP and O2 Vindkompaniet, along with various wind turbine manufacturers, has resulted in development of a generic de-icing system that can be installed in house, or on site on an existing turbine. The patented design and proprietary process utilizes a pressure sensitive application system and material combinations that can be used in applications where there is a power source available providing up to and beyond the 690 volts our system currently uses.

Of the many challenges being realized; the ability to predict environmental conditions promoting icing, and the challenges in measure icing conditions, a major road-block appears to be the release of critical information. This information from the OEMs is necessary for an efficient and effective development process. This reluctance appears to be mainly due to competitive and proprietary design concerns, and has a negative impact on development.

#### Radiant Thermal Sheet<sup>™</sup> (RTS) Technology

#### Recognized Technology

The conductive film in our RTS<sup>™</sup> technology was developed with fortune 500 companies, and is made with EcoTEMP's patented proprietary manufacturing process.

#### **Uniform Heating**

RTS<sup>™</sup> heaters provide evenly distributed radiant heat, and a high level of reliability and performance. If any part of the material is cut or punctured, the heater will remain operational.

#### Power Usage

Power requirements are considerably less than current technologies with scalable voltage capabilities ranging up to and beyond 690 volts.

#### **EcoTEMP's Success**

In 1992, EcoTEMP began with its unique approach to satellite de-icing systems. Since then, EcoTEMP has continued to add innovation into the automotive, pipeline, and today, the renewable energy market. Since the companies' inception, EcoTEMP has been rapidly growing to develop new technologies to solve existing challenges in today's various markets.

#### EcoTEMP's History



Renewable energy Sheet (RTS™) warming components produced for automotive seat installation N.A. & Europe technology heating begins project 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010 First satellite antenna First pipe heat SCR system design ECOTEMP 15t Proprietary de-icing design and tracing and development manufacturing anniversary system installations installation

Ease of Installation Installation of our heaters uses a simplified 'Peel and Stick' process.

#### Next Step

Continuous improvement. Third generation of RTS<sup>™</sup> in development.







Functions to spec after being crumpled



178 holes 7mm diameter maintains even heat

#### **Preliminary Testing**



#### Defying All Challenges

- EcoTEMP is the only company offering RTS<sup>™</sup> technology to the seat heating market.
- Lowest power draw in the industry.
- Made with EcoTEMP's proprietary manufacturing process.
- Ease of installation (Peel and Stick).
- High heat transfer capabilities.
- Scaling voltage capabilities up to and beyond 690 volts.
- Continuous improvement. Third generation of RTS<sup>™</sup> in development.

#### **Development from Design to Installation**



### Looking To The Future



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