

# Sustainability and Solar

**Presented by:**  
**Bill Spenceley, Flexahopper Plastics Ltd.**  
**ARM Fall Meeting 2018, Montreal**



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## **Presentation Goals**

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- **Discuss Sustainability in Rotomolding.**
- **Showcase Solar in our Industry.**
- **Outline ways to reduce energy in our process.**
- **Highlight some sustainability opportunities.**

# **Sustainability and Solar**

## **Why Sustainability?**

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Sustainable business practices benefit the bottom line.

Consumers will continue to drive this trend.

# **Sustainability and Solar**

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- Define your sustainability priorities.
- Evaluate your sustainability costs and benefits.
- Set specific and achievable sustainability goals.
- Create consistent sustainability incentives for management and suppliers.

# **Sustainability and Solar**

The background features a light green field with a large, faint, stylized infinity symbol in the center. On the left, there is a vertical blue bar and a horizontal cyan bar intersecting. At the bottom, there is a horizontal red bar.



# **Sustainability and Solar**

**Flexahopper Plastics Ltd.**  
**Case study:**

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- 2018:** Replaced all the factory lighting with LED high bay style (programmable) fixtures.



# Sustainability and Solar



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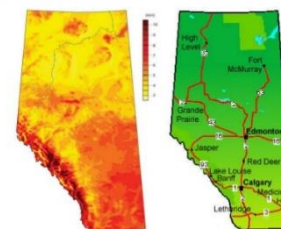
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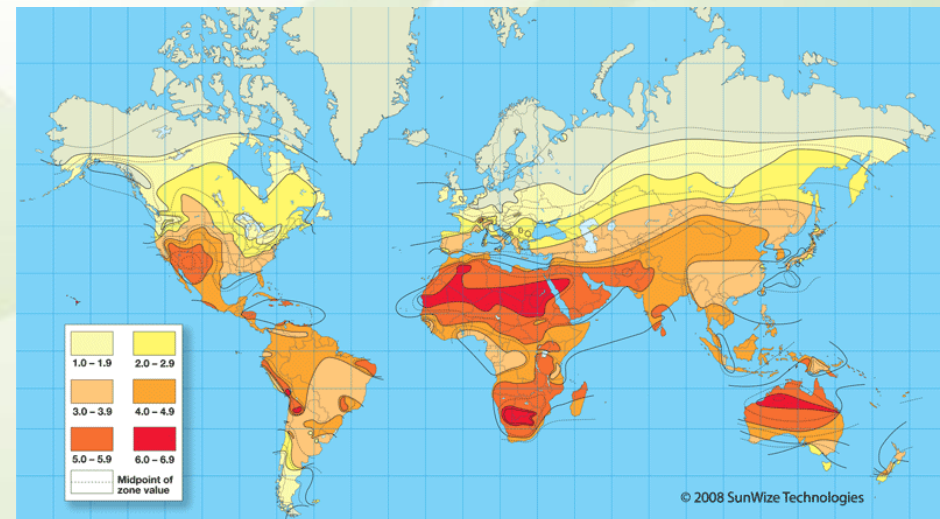
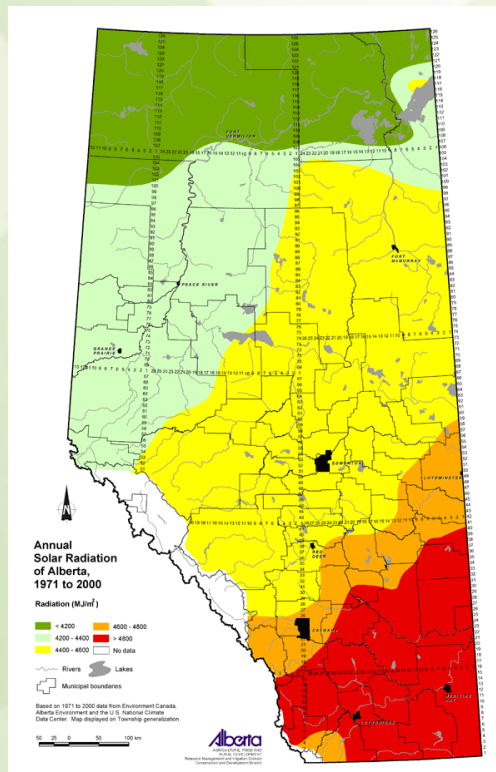
### Alberta's Wind Energy Resource

- Alberta has one of the best on-land wind energy resources in Canada
- Average annual wind speeds of 6-8 m/s (22 – 25km/hr) are abundant in south half of province, where major population is concentrated



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- Initial investigations into solar (2005) were not promising. The industry was new to the region and reliable installers were not available.
- There was a change in Government with programs introduced to encourage renewable energy projects.
- A pool of experienced installers became available and detailed analyse pointed to a viable business case for installing solar at Flexahopper.

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- A monitoring system is installed that helps monitor (real-time) output from the array as well as the power in from the provincial electrical grid.



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- The system has a ROI estimated at 7.5-8.5 years.
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- This year we will be looking at battery storage opportunities to capture excess power and reduce demand billing charges.



# Sustainability and Solar

## Tips and Tricks:

- There a number of options for placement of solar arrays (Roof mounted, ground mounted). Roof mounted was ideal for us and the structure was designed for the increased roof loading. Ground mounting would have used up valuable yard space.



The third option is to build custom framing if the roof is not a possibility.

# Sustainability and Solar

## Tips and Tricks:



The designated location of the solar array (newer section built in 2003). This a mono-sloped roof with a shallow draft but facing south.

# Sustainability and Solar

## Tips and Tricks:



Roof loading was designed for solar. If you are looking at any new builds at your facility you should consider adding these capabilities into the design. Engineering costs are simple if you decide to go solar in the future.



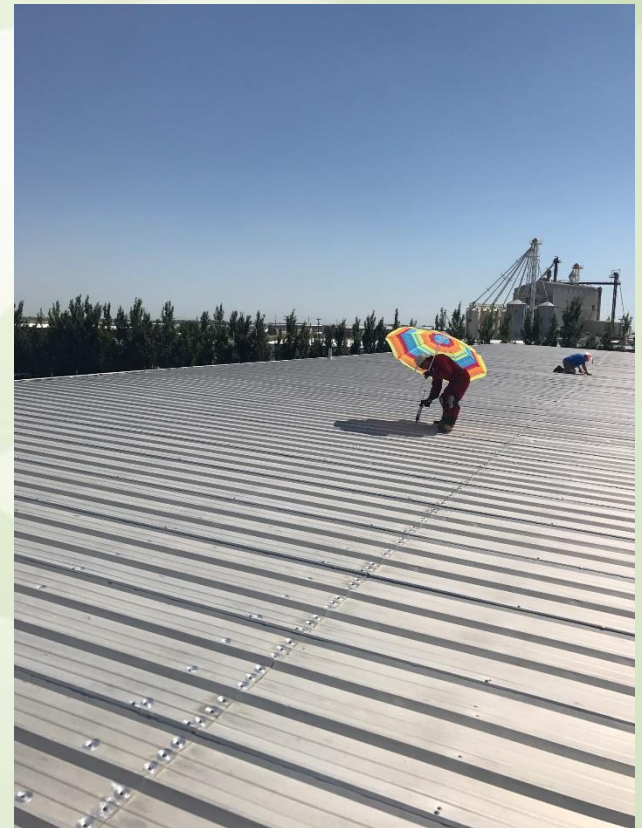
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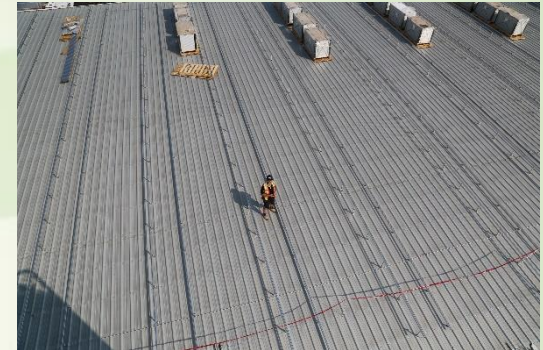
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Construction in progress



# Sustainability and Solar

## Tips and Tricks:



Construction showing the brackets (15 degree tilt) and roof mounted safety disconnects.

# Sustainability and Solar

## Tips and Tricks:



Considerable media coverage and attendance by various government dignitaries.





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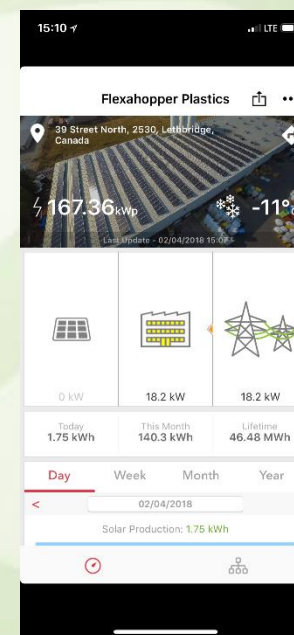
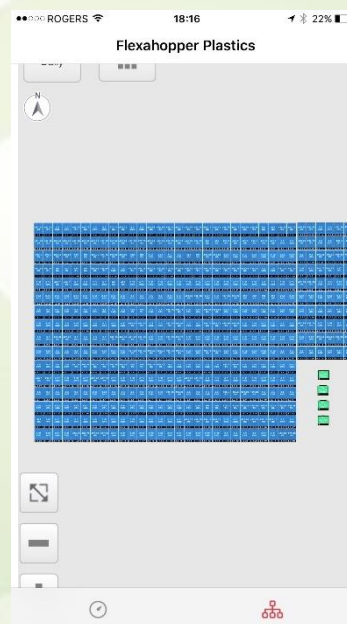


Snow coverage is a challenge at times



# Sustainability and Solar

## Tips and Tricks:



Various reporting information from the system

# Sustainability and Solar

## Positive Notes:

- The system demonstrates a strong commitment in sustainability.
- Power bills are significantly reduced.
- We received substantial free media coverage.
- It has motivated our staff. Millennials love solar!
- Monitoring equipment has allowed us to identify and measure waste.
- Solar is simple and reliable.
- We have many opportunities to continue reduce our environmental footprint.



# Sustainability and Solar

## Solar Considerations:

- Get analysis that includes, shading, soiling losses, and realistic performance estimates from a certified/experienced installer.
- Don't let government incentives drive the size of the system.
- Check out policies of the power providers in regards to buying excess power.
- Inclined vs. flat panels have reduced soiling!

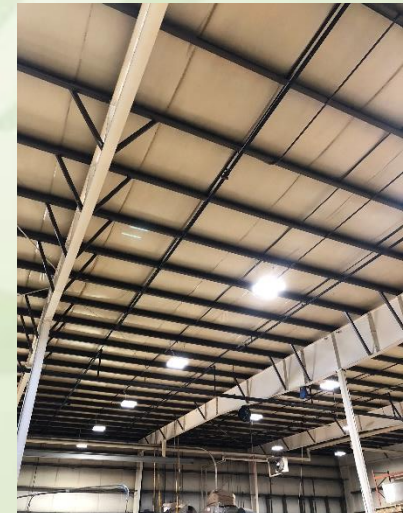
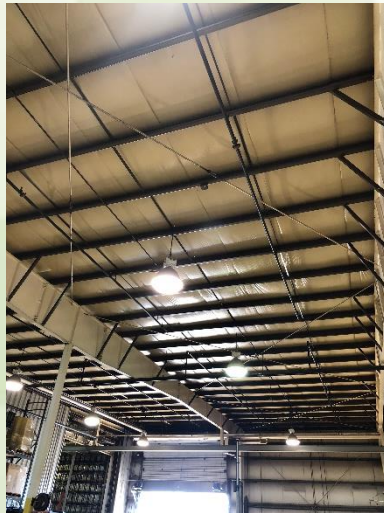
### **Most Important:**

- Anticipate that you will reduce your plant power requirements through efficiencies (LED lighting, new equipment, etc.) going forward. Don't size the solar system to meet 100% of your existing power requirements.

# Sustainability and Solar

## LED Lighting Project 2018:

- Our company replaced all plant lighting with LED fixtures.
- Significantly increased lumens/area using significantly less power.
- New models are programable and have light harvesting modes.
- ROI estimated 2 years but may be less because of new skylights.



# Sustainability and Solar

## Sustainability Strategies in Rotational Moulding:

1. Heating Cycle reduction opportunities.
2. Mold/Oven Maintenance
3. Electric motors
4. Power tool selection
5. Air Compressor system optimization



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## Sustainability projects and our Industry

- Plastics has been linked to some highly publicized issues.
- The whole industry is being painted in a negative manner regardless of our involvement.
- We all need to work hard at getting positive messaging out to the public to counter this “one sided story”.

# **Sustainability and Solar**

## **Sustainability projects and our Industry**

### **Ways to do this:**

- Adopt energy efficiency as a focus in your company.
- Energize your employees in this team effort.
- Leverage social media to communicate your efforts.
- Associate your company's brand with support of other community/national/international projects that promote sustainability.



# Sustainability and Solar

## Sustainability projects and our Industry

An industry Example:



# Sustainability and Solar

**Consider Sustainability in your organization**

Thank you!

Email:  
[bspenceley@Flexahopper.com](mailto:bspenceley@Flexahopper.com)

