



## Factsheet GEM-tower

A green solution for festivals, the GEM-tower (Green Energy Mill) is a hybrid, fold-out, eye-catching tower that makes festivals more sustainable. The tower will be up to 21 meters high and has a diameter of 8 meters at the base. The tower generates energy through solar panels and a wind turbine and the energy is stored in a battery.

Regardless of the weather conditions, the festival is provided with sustainable energy. In addition, the GEM-tower is an eye-catcher. Festivals can use the colored LSC panels to give their own interpretation to the appearance of the tower. And last but not least, the GEM-tower will create more awareness on sustainability.

In the first half of 2019 the tower was constructed and built. Since the summer of 2019 GEM-tower is on a testing tour until the end of 2020.

Specs of the tower:

- Height: 21 m;
- Wind turbine: Darrieus–Savonius Vertical Axis, 3 kW;
- Battery: 25 VRLA cells, 30 kVA, 90 kWh;
- PV panels: Semi Flexible, PERC cells, 10 kW;
- Base diameter: 10m.

Did you know:

- More than 3500 kg of steel has been used.
- There are more than 300 hinges in the tower.
- 542 bolts and nuts are required.
- The height of the triangles becomes more than 14 times more after folding out (from 96 centimeters to more than 14 meters).
- There is a 700 kg vertical wind turbine at 18m height.
- There are almost 20m<sup>2</sup> of colored solar panels (LSC panels) incorporated in the tower.
- The tower does not have to be anchored.
- 2.7 m<sup>3</sup> of concrete was used as a counterweight.
- 10 companies from more than 3 different countries worked together on this project.
- An estimated 100 people contributed to the realization of the first GEM tower.
- The 90 kWh GEM Tower's battery can charge one's iPhone 6000 times – that's 16 years' worth of charging if one charges the phone daily
- In the summer the 10 kWp GEM Tower's solar system can charge one's Tesla Model 3 and give it 180 km range on pure solar power.

[www.gem-tower.com](http://www.gem-tower.com)

GEM-tower is part of PowerVIBES, an Interreg NWE project