

# voltec 385 toiture plate

## DECHETERIE SAVIGNY PRE, r de warcq, 08000 Charleville-Mézières

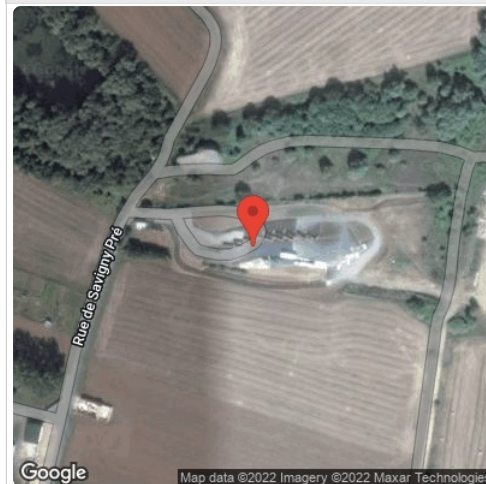
### Report

|                 |  |
|-----------------|--|
| Project Name    | DECHETERIE SAVIGNY PRE                 |
| Project Address | r de warcq, 08000 Charleville-Mézières |
| Prepared By     | Kamar Amine<br>kamin008@fiu.edu        |

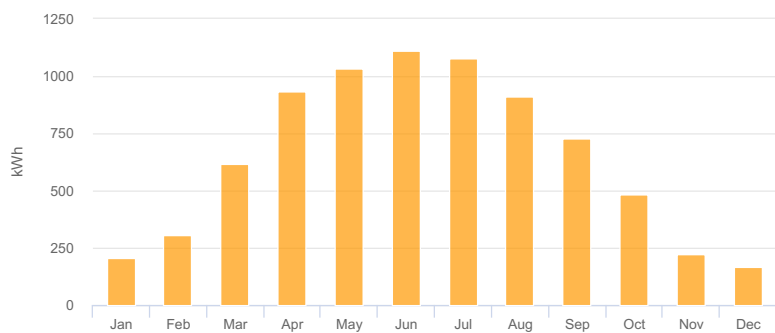
### System Metrics

|                       |   |
|-----------------------|---|
| Design                | voltec 385 toiture plate                    |
| Module DC Nameplate   | 7.70 kW                                     |
| Inverter AC Nameplate | 5.80 kW<br>Load Ratio: 1.33                 |
| Annual Production     | 7.800 MWh                                   |
| Performance Ratio     | 87.4%                                       |
| kWh/kWp               | 1,013.0                                     |
| Weather Dataset       | TMY, 10km Grid, meteonorm (meteonorm)       |
| Simulator Version     | 9e86c4e1db-9514b63be0-bd0277d220-518e709a6c |

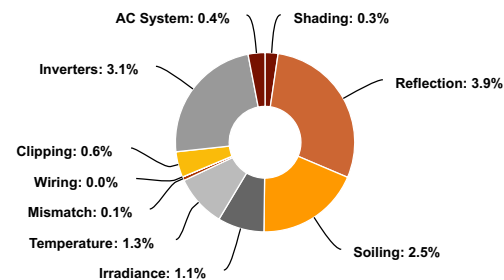
### Project Location



### Monthly Production



### Sources of System Loss



### Annual Production

|                                  | Description                         | Output         | % Delta      |
|----------------------------------|-------------------------------------|----------------|--------------|
| Irradiance (kWh/m <sup>2</sup> ) | Annual Global Horizontal Irradiance | 1,053.3        |              |
|                                  | POA Irradiance                      | 1,159.2        | 10.1%        |
|                                  | Shaded Irradiance                   | 1,155.6        | -0.3%        |
|                                  | Irradiance after Reflection         | 1,110.9        | -3.9%        |
|                                  | Irradiance after Soiling            | 1,083.2        | -2.5%        |
|                                  | <b>Total Collector Irradiance</b>   | <b>1,083.2</b> | <b>0.0%</b>  |
| Energy (kWh)                     | Nameplate                           | 8,339.7        |              |
|                                  | Output at Irradiance Levels         | 8,246.6        | -1.1%        |
|                                  | Output at Cell Temperature Derate   | 8,143.4        | -1.3%        |
|                                  | Output After Mismatch               | 8,136.1        | -0.1%        |
|                                  | Optimal DC Output                   | 8,136.1        | 0.0%         |
|                                  | Constrained DC Output               | 8,086.0        | -0.6%        |
|                                  | Inverter Output                     | 7,831.9        | -3.0%        |
|                                  | <b>Energy to Grid</b>               | <b>7,800.1</b> | <b>-0.4%</b> |
| Temperature Metrics              |                                     |                |              |
|                                  | Avg. Operating Ambient Temp         |                | 12.6 °C      |
|                                  | Avg. Operating Cell Temp            |                | 18.9 °C      |
| Simulation Metrics               |                                     |                |              |
|                                  | Operating Hours                     | 4609           |              |
|                                  | Solved Hours                        | 4609           |              |

| ☁ Condition Set              |                                       |       |     |         |     |                   |     |                                  |     |     |     |     |     |
|------------------------------|---------------------------------------|-------|-----|---------|-----|-------------------|-----|----------------------------------|-----|-----|-----|-----|-----|
| Description                  | Condition Set 1                       |       |     |         |     |                   |     |                                  |     |     |     |     |     |
| Weather Dataset              | TMY, 10km Grid, meteonorm (meteonorm) |       |     |         |     |                   |     |                                  |     |     |     |     |     |
| Solar Angle Location         | Meteo Lat/Lng                         |       |     |         |     |                   |     |                                  |     |     |     |     |     |
| Transposition Model          | Perez Model                           |       |     |         |     |                   |     |                                  |     |     |     |     |     |
| Temperature Model            | Sandia Model                          |       |     |         |     |                   |     |                                  |     |     |     |     |     |
| Temperature Model Parameters | Rack Type                             | a     |     | b       |     | Temperature Delta |     |                                  |     |     |     |     |     |
|                              | Fixed Tilt                            | -3.56 |     | -0.075  |     | 3°C               |     |                                  |     |     |     |     |     |
|                              | Flush Mount                           | -2.81 |     | -0.0455 |     | 0°C               |     |                                  |     |     |     |     |     |
| Soiling (%)                  | J                                     | F     | M   | A       | M   | J                 | J   | A                                | S   | O   | N   | D   |     |
|                              | 2.5                                   | 2.5   | 2.5 | 2.5     | 2.5 | 2.5               | 2.5 | 2.5                              | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Irradiation Variance         | 5%                                    |       |     |         |     |                   |     |                                  |     |     |     |     |     |
| Cell Temperature Spread      | 4° C                                  |       |     |         |     |                   |     |                                  |     |     |     |     |     |
| Module Binning Range         | -2.5% to 2.5%                         |       |     |         |     |                   |     |                                  |     |     |     |     |     |
| AC System Derate             | 0.50%                                 |       |     |         |     |                   |     |                                  |     |     |     |     |     |
| Module Characterizations     | Module                                |       |     |         |     | Uploaded By       |     | Characterization                 |     |     |     |     |     |
|                              | TARKA 126 VSBD 385 (Voltec Solar)     |       |     |         |     | HelioScope        |     | Spec Sheet Characterization, PAN |     |     |     |     |     |
| Component Characterizations  | Device                                |       |     |         |     | Uploaded By       |     | Characterization                 |     |     |     |     |     |
|                              | IQ7A-72-2-US (208V) (2019) (Enphase)  |       |     |         |     | HelioScope        |     | Spec Sheet                       |     |     |     |     |     |

| 🗂 Components |   |              |
|--------------|---|--------------|
| Component    | Name                                    | Count        |
| Inverters    | IQ7A-72-2-US (208V) (2019) (Enphase)    | 20 (5.80 kW) |
| AC Branches  | 1000 MCM (Aluminum)                     | 1 (55.0 m)   |
| Module       | Voltec Solar, TARKA 126 VSBD 385 (385W) | 20 (7.70 kW) |

| 🔌 Wiring Zones |                |             |                    |
|----------------|----------------|-------------|--------------------|
| Description    | Combiner Poles | String Size | Stringing Strategy |
| Wiring Zone    | -              | 1-2         | Along Racking      |

| 🏠 Field Segments |            |                     |      |            |                  |            |        |         |         |
|------------------|------------|---------------------|------|------------|------------------|------------|--------|---------|---------|
| Description      | Racking    | Orientation         | Tilt | Azimuth    | Intrarow Spacing | Frame Size | Frames | Modules | Power   |
| Field Segment 1  | Fixed Tilt | Portrait (Vertical) | 15°  | 166.64357° | 2.8 m            | 1x1        | 6      | 6       | 2.31 kW |
| Field Segment 2  | Fixed Tilt | Portrait (Vertical) | 15°  | 187.15067° | 2.2 m            | 1x1        | 14     | 14      | 5.39 kW |

