Optimizing PV for complex rooftops with SAM

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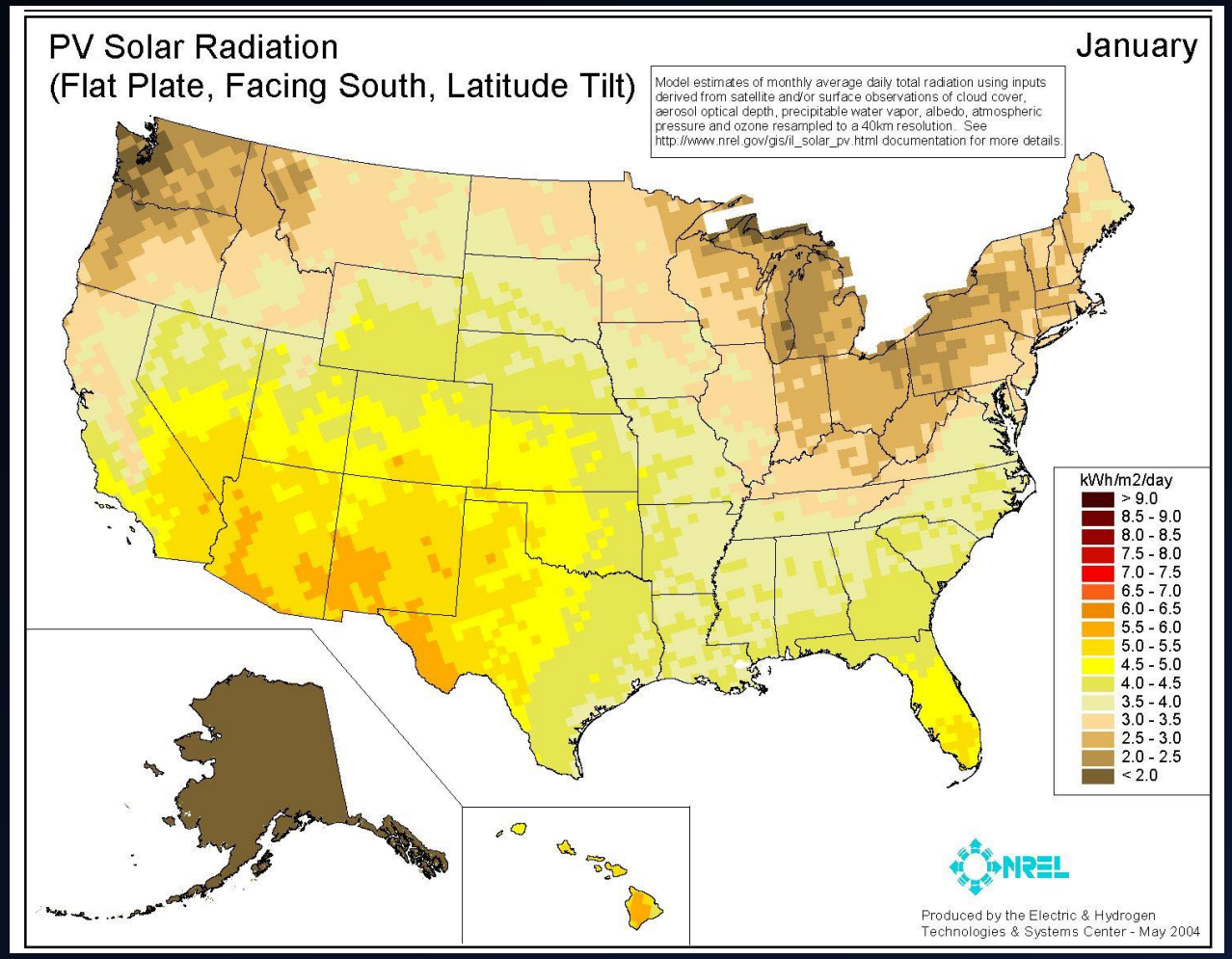
Solar in the Evergreen State

- Tall Evergreen trees
- High Lattitude
- Cloud Cover
- Low Tariffs $0.085
- PBI Cap



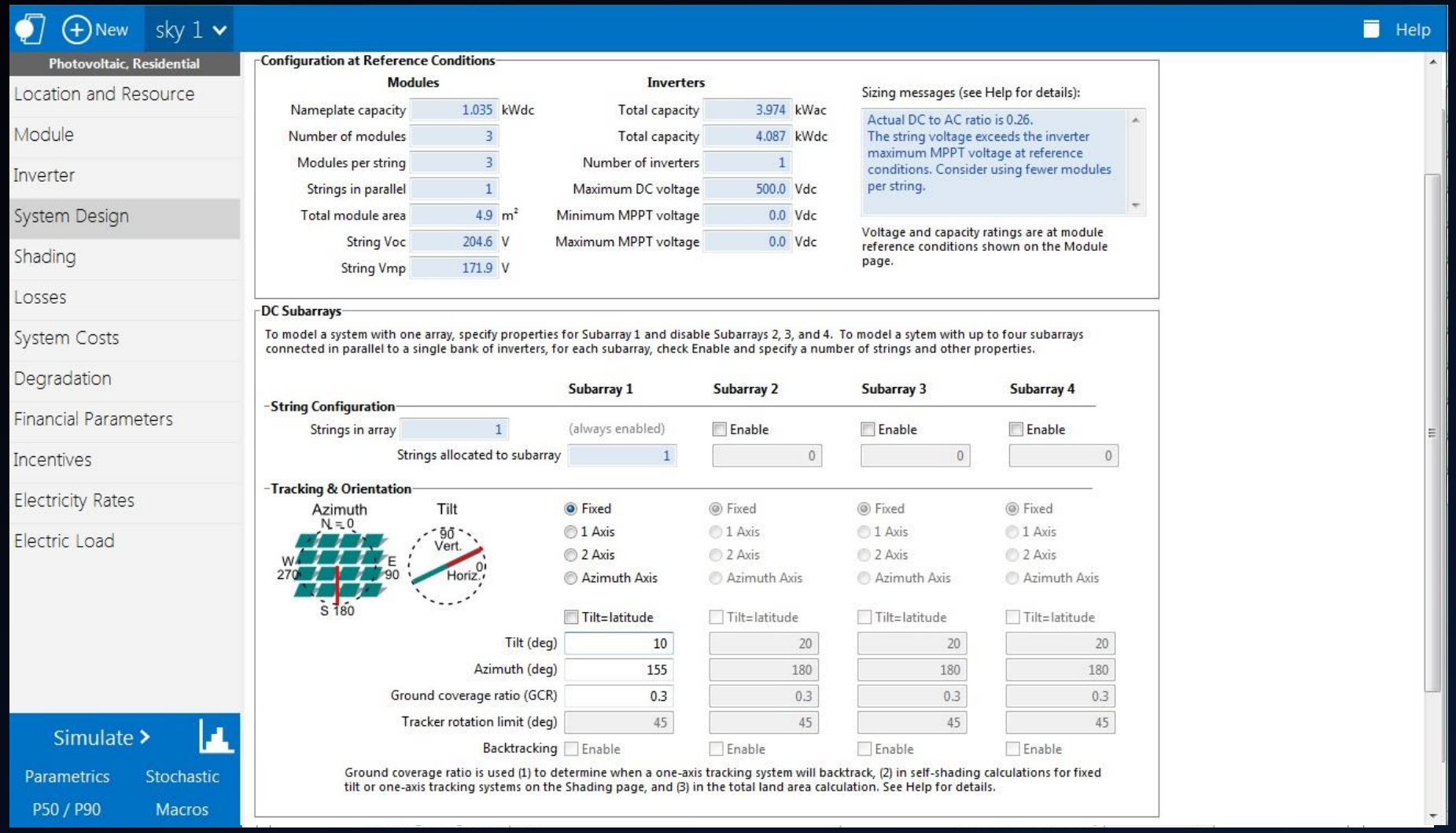
The site

Suneye Measurements

Sky	Solar Access
5	90%
2	88%
4	87%
6	87%
1	84%
9	84%
11	81%
3	79%
10	76%
7	74%
8	72%

Initial Layout

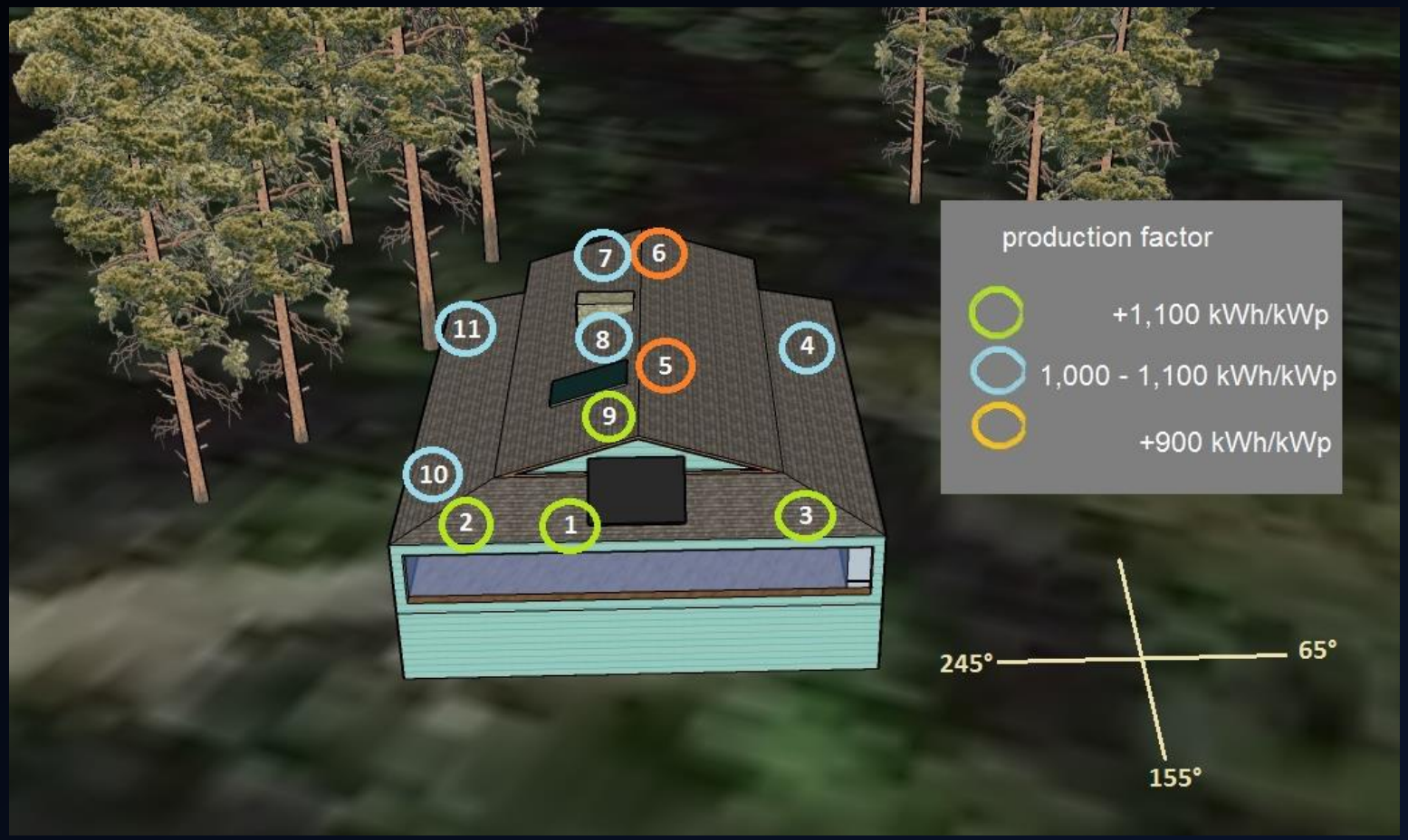
SAM Virtual 1 kW Array



SAM Virtual 1 kW Array

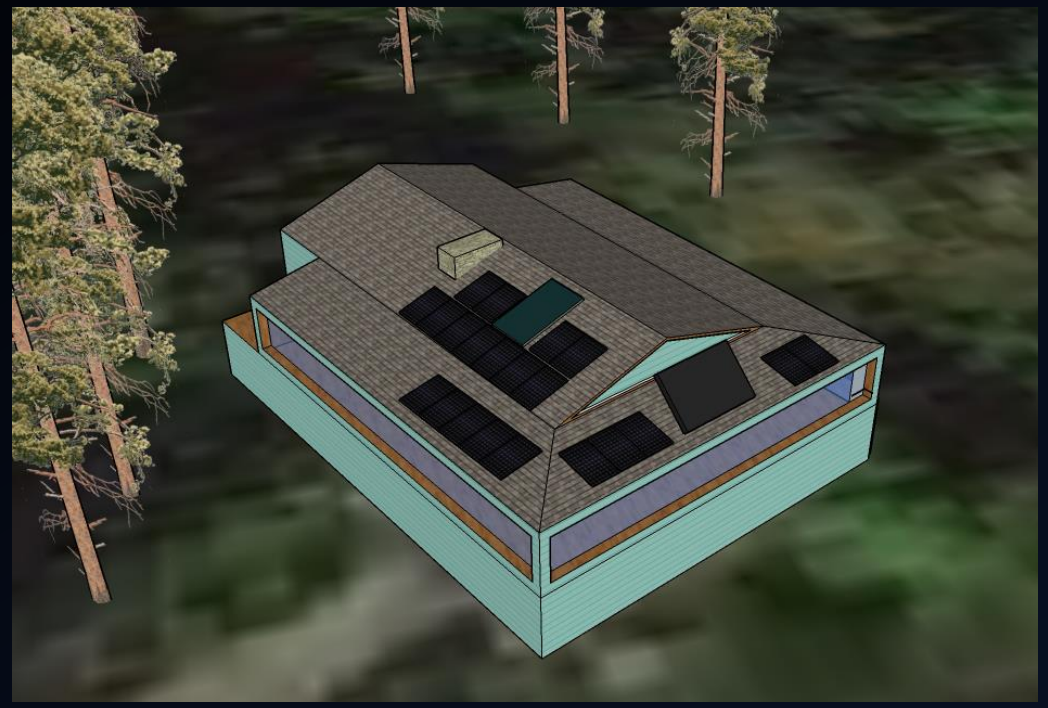
Sky	Tilt °	Orientation 180° = true south	Latitude N	Longitude W	Solar Access	Annual Energy Yield KW-hr	Production Factor
1	6	155	48.59952	122.93810	84%	1600	**1160**
2	6	155	48.59950	122.93816	88%	1600	**1160**
3	6	155	48.59954	122.93807	79%	1543	**1118**
4	6	65	48.59962	122.93800	87%	1427	**1034**
5	17	65	48.59956	122.93807	90%	1362	**987**
6	17	65	48.59964	122.93816	87%	1336	**969**
7	17	245	48.59954	122.93822	74%	1474	**1069**
8	17	245	48.59956	122.93819	72%	1477	**1071**
9	17	245	48.59954	122.93816	84%	1589	**1151**
10	6	245	48.59952	122.93818	76%	1498	**1086**
11	6	245	48.59952	122.93822	81%	1555	**1127**

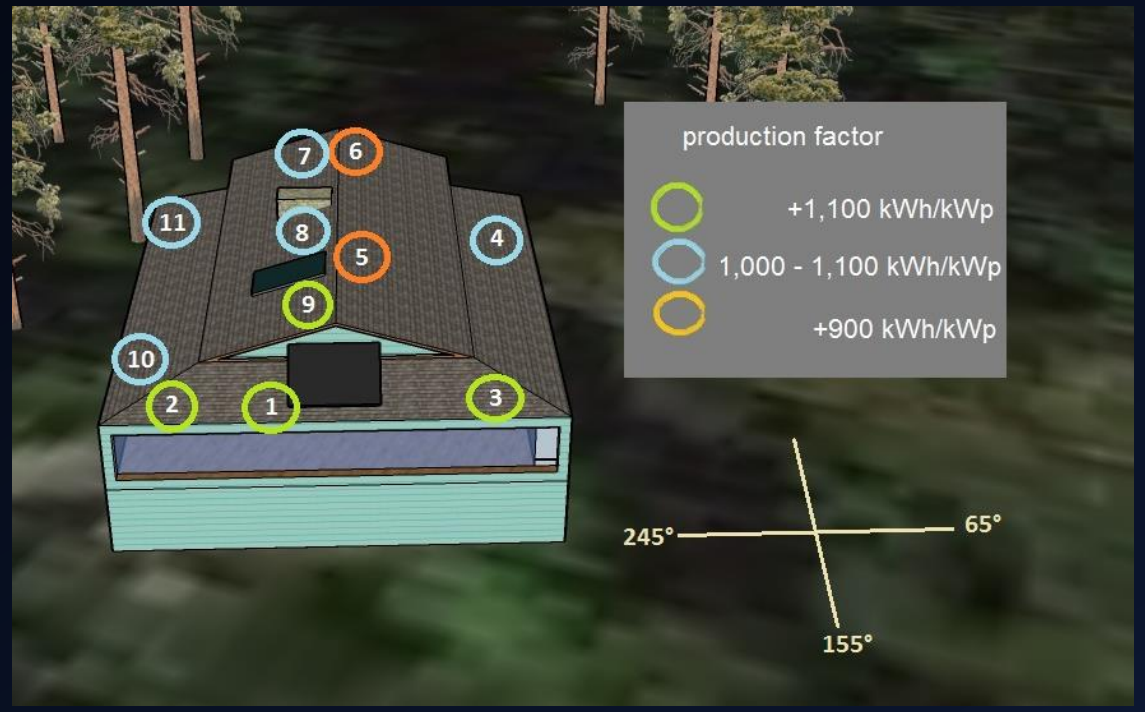
Suneye *skylines*



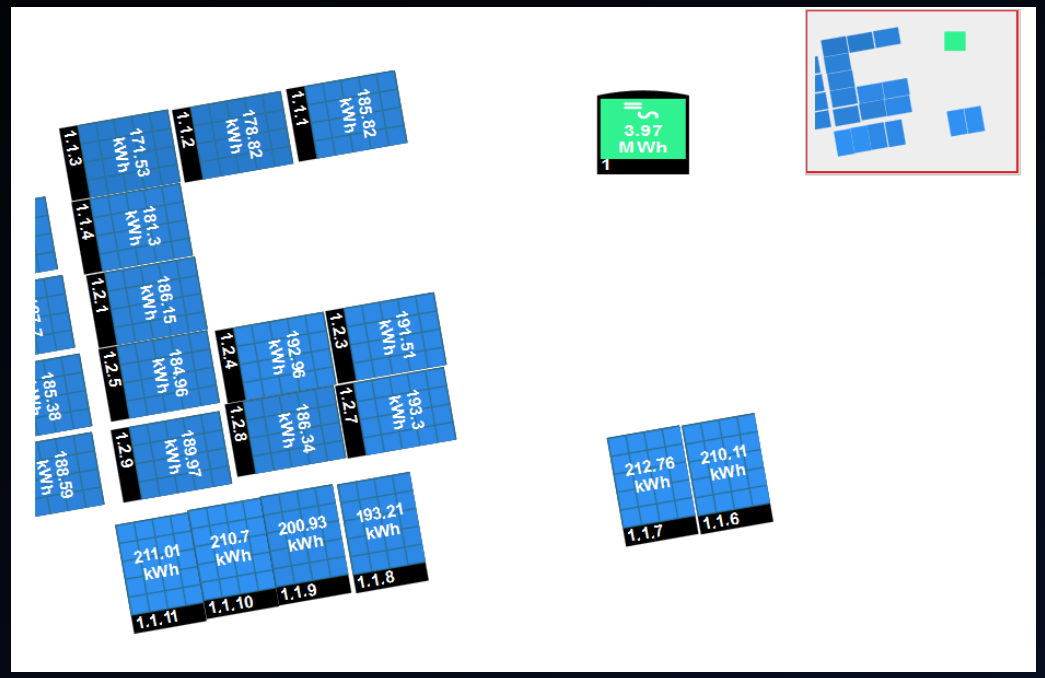
Sky	Production Factor	Tier
1	**1160**	A
2	**1160**	A
9	**1151**	A
11	**1127**	A
3	**1118**	A
10	**1086**	B
8	**1071**	B
7	**1069**	B
4	**1034**	B
5	**987**	C
6	**969**	C

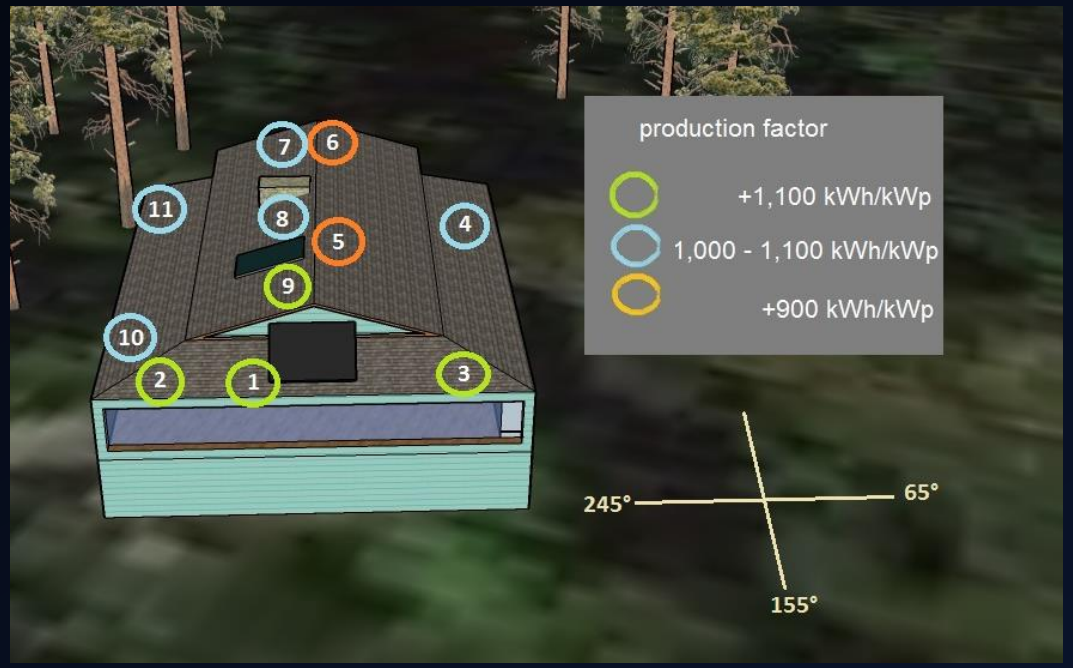
Final Design





Live Data





- 7.25 kW SAM model (3 sub-arrays)
- Estimated annual production: 7,654 kWhs
- Jan 1, 2015 – Jun 30, 2015 actual production: 3,968.7 kWhs