

# PvPlanner WS: request / response examples

- pvPlanner calculate
  - XML Schemas
  - Request XML
  - Response XML

WSDL location: <https://solargis.info/ws/soap/pvPlannerWebService.wsdl>

REST endpoint: <https://solargis.info/ws/rest/pvplanner/calculate?key=demo>

## pvPlanner calculate

Web service access to PvPlanner "Calculate" functionality, available in online application: <http://solargis.info/pvplanner>

### XML Schemas

- [ws-pvplanner.xsd](#) - pvPlanner web service request and response
- [common-types.xsd](#) - generic common types, like percent, monthly values, etc.
- [common-geo.xsd](#) - geographic common types, like location, terrain, horizon, etc.
- [common-pv.xsd](#) - pv system common configuration, like geometry, mounting, losses, etc.

Technical schema documentation is available [here](#)

### Request XML

```

<calculateRequest xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:geo="http://geomodel.eu/schema/common/geo"
  xmlns:pv="http://geomodel.eu/schema/common/pv"
  xmlns="http://geomodel.eu/schema/ws/pvplanner">
  <site lat="48.612590" lng="20.827079">
    <!-- optional terrain data -->
    <geo:terrain elevation="246" azimuth="176" tilt="3.1" />
    <!-- optional horizon data -->
    <geo:horizon>11.11:18.0 7.5:15.53 15.0:10.94 22.5:10.59
30.0:13.06 37.5:14.47 45.0:14.47 52.5:13.76 60.0:12.35 67.5:11.29 75.0:
8.12 82.5:4.59 90.0:1.41 97.5:0.35 105.0:0.35 112.5:0.35 120.0:0.35 127.5:
0.35 135.0:0.0 142.5:0.0 150.0:0.35 157.5:1.41 165.0:2.47 172.5:2.47 180.0:
2.82 187.5:3.18 195.0:2.82 202.5:2.47 210.0:2.47 217.5:2.47 225.0:3.18
232.5:3.18 240.0:2.47 247.5:2.12 255.0:2.12 262.5:2.82 270.0:3.88 277.5:
6.71 285.0:8.47 292.5:10.24 300.0:11.29 307.5:12.71 315.0:14.12 322.5:
15.53 330.0:16.24 337.5:16.94 345.0:17.29 352.5:17.29</geo:horizon>
    <pv:geometry xsi:type="pv:GeometryFixedOneAngle" azimuth="
175" tilt="45"/>
    <pv:system installedPower="1" installationType="
ROOF_MOUNTED" availability="99">
      <pv:module type="CSI">
      </pv:module>
      <pv:inverter>
        <pv:efficiency xsi:type="pv:
EfficiencyConstant" percent="97.5"/>
      </pv:inverter>
      <pv:losses dc="5.5" ac="1.5"/>
    </pv:system>
  </site>
</calculateRequest>

```

## Response XML

```

<ns4:calculateResponse xmlns:ns4="http://geomodel.eu/schema/ws/pvplanner"
  xmlns:ns2="http://geomodel.eu/schema/common/geo" xmlns:ns3="
http://geomodel.eu/schema/common/pv" xmlns:ns5="http://geomodel.eu/schema
/ws/data">
  <ns4:site lat="48.61259" lng="20.827079">
    <ns2:terrain azimuth="176" elevation="246" tilt="3.1"/>
    <ns2:horizon>11.11:18.0 7.5:15.53 15.0:10.94 22.5:10.59 30.0:13.06
37.5:14.47 45.0:14.47 52.5:13.76 60.0:12.35 67.5:11.29 75.0:8.12 82.5:4.59
90.0:1.41 97.5:0.35 105.0:0.35 112.5:0.35 120.0:0.35 127.5:0.35 135.0:0.0
142.5:0.0 150.0:0.35 157.5:1.41 165.0:2.47 172.5:2.47 180.0:2.82 187.5:
3.18 195.0:2.82 202.5:2.47 210.0:2.47 217.5:2.47 225.0:3.18 232.5:3.18
240.0:2.47 247.5:2.12 255.0:2.12 262.5:2.82 270.0:3.88 277.5:6.71 285.0:
8.47 292.5:10.24 300.0:11.29 307.5:12.71 315.0:14.12 322.5:15.53 330.0:
16.24 337.5:16.94 345.0:17.29 352.5:17.29</ns2:horizon>
    <ns3:geometry azimuth="175" tilt="45.0" xsi:type="ns3:
GeometryFixedOneAngle" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"/>

```

```

    <ns3:system availability="99.0" installationType="ROOF_MOUNTED"
installedPower="1.0">
      <ns3:module type="CSI">
        <ns3:degradation>0.0</ns3:degradation>
      </ns3:module>
      <ns3:inverter>
        <ns3:efficiency percent="97.5" xsi:type="ns3:
EfficiencyConstant" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"/>
      </ns3:inverter>
      <ns3:losses ac="1.5" dc="5.5"/>
    </ns3:system>
  </ns4:site>
  <ns4:irradiation>
    <ns4:reference>
      <ns4:Ghm monthly="33 50 96 125 158 168 165 150 100 66 34 24"
yearly="1169"/>
      <ns4:Ghd monthly="1.05 1.80 3.08 4.16 5.11 5.59 5.32 4.85 3.35
2.12 1.12 0.78" yearly="3.20"/>
      <ns4:Dhd monthly="0.61 0.98 1.61 2.13 2.61 2.80 2.69 2.32 1.70
1.14 0.69 0.48" yearly="1.65"/>
      <ns4:Td monthly="-1.8 -0.4 4.1 10.1 15.5 18.6 20.5 19.9 14.5 9.4
3.9 -1.2" yearly="9.5"/>
      <ns4:Tmin monthly="-3.7 -3.1 0.9 6.5 11.1 13.9 15.9 15.6 11.2
6.3 1.7 -2.9"/>
      <ns4:Tmax monthly="1.4 3.8 8.8 15.5 20.9 23.9 25.8 25.8 20.3
14.6 7.6 1.6"/>
    </ns4:reference>
    <ns4:inplane>
      <ns4:Gim monthly="63 82 126 139 155 155 157 160 124 98 58 48"
yearly="1365"/>
      <ns4:Gid monthly="2.05 2.92 4.08 4.63 4.99 5.17 5.06 5.17 4.12
3.17 1.93 1.54" yearly="3.74"/>
      <ns4:Did monthly="0.73 1.10 1.70 2.10 2.44 2.56 2.49 2.28 1.75
1.26 0.78 0.57" yearly="1.65"/>
      <ns4:Rid monthly="0.02 0.03 0.06 0.08 0.09 0.10 0.10 0.09 0.06
0.04 0.02 0.01" yearly="0.06"/>
      <ns4:ShLoss monthly="0.5 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1
0.4" yearly="0.1"/>
    </ns4:inplane>
    <ns4:comparison>
      <ns4:horizontal percentOpt="84.9" yearlySum="1169.0"/>
      <ns4:optimum percentOpt="100.0" yearlySum="1377.0"/>
      <ns4:tracker2x percentOpt="126.0" yearlySum="1735.0"/>
      <ns4:selected percentOpt="99.1" yearlySum="1365.0"/>
    </ns4:comparison>
    <ns4:optimum fixed="37.0"/>
  </ns4:irradiation>
  <ns4:calculation>
    <ns4:output>
      <ns4:Esm monthly="54 69 104 110 120 119 119 122 97 79 48 41"
yearly="1086"/>
      <ns4:Esd monthly="1.76 2.49 3.37 3.69 3.88 3.97 3.85 3.95 3.24
2.57 1.61 1.32" yearly="2.98"/>

```

```
<ns4:Etm monthly="55 70 104 111 120 119 119 122 97 80 48 41"
yearly="1087"/>
  <ns4:Eshare monthly="5.0 6.4 9.6 10.2 11.1 10.9 11.0 11.3 8.9
7.3 4.4 3.8" yearly="100.0"/>
  <ns4:PR monthly="85.6 85.0 82.8 79.8 77.9 76.8 76.1 76.6 78.6
80.9 83.1 85.2" yearly="79.6"/>
  </ns4:output>
  <ns4:losses>
    <ns4:global PRc="100.0" PRp="100.0" output="1366"/>
    <ns4:terrain PRc="99.9" PRp="99.9" lossAbs="-1" lossRel="-0.1"
output="1365"/>
    <ns4:angular PRc="97.0" PRp="97.1" lossAbs="-40" lossRel="-2.9"
output="1325"/>
    <ns4:conversion PRc="88.5" PRp="91.2" lossAbs="-116" lossRel="
-8.8" output="1209"/>
    <ns4:dcLoss PRc="83.7" PRp="94.5" lossAbs="-66" lossRel="-5.5"
output="1143"/>
    <ns4:inverter PRc="81.6" PRp="97.5" lossAbs="-29" lossRel="-2.5"
output="1114"/>
    <ns4:acLoss PRc="80.4" PRp="98.6" lossAbs="-16" lossRel="-1.4"
output="1098"/>
    <ns4:availability PRc="79.6" PRp="99.0" lossAbs="-11" lossRel="
-1.0" output="1087"/>
    <ns4:total PRc="79.6" lossAbs="-279" lossRel="-20.4" output="
1087"/>
  </ns4:losses>
</ns4:calculation>
  <ns4:summary>PV system: 1.0 kWp, crystalline silicon, fixed roof,
azim. 175&deg; (south), inclination 45&deg;</ns4:summary>
</ns4:calculateResponse>
```