Sentinel Vision
SED-966
03 November 2021

2D Layerstack

Sihwa tidal power plant, South Korea

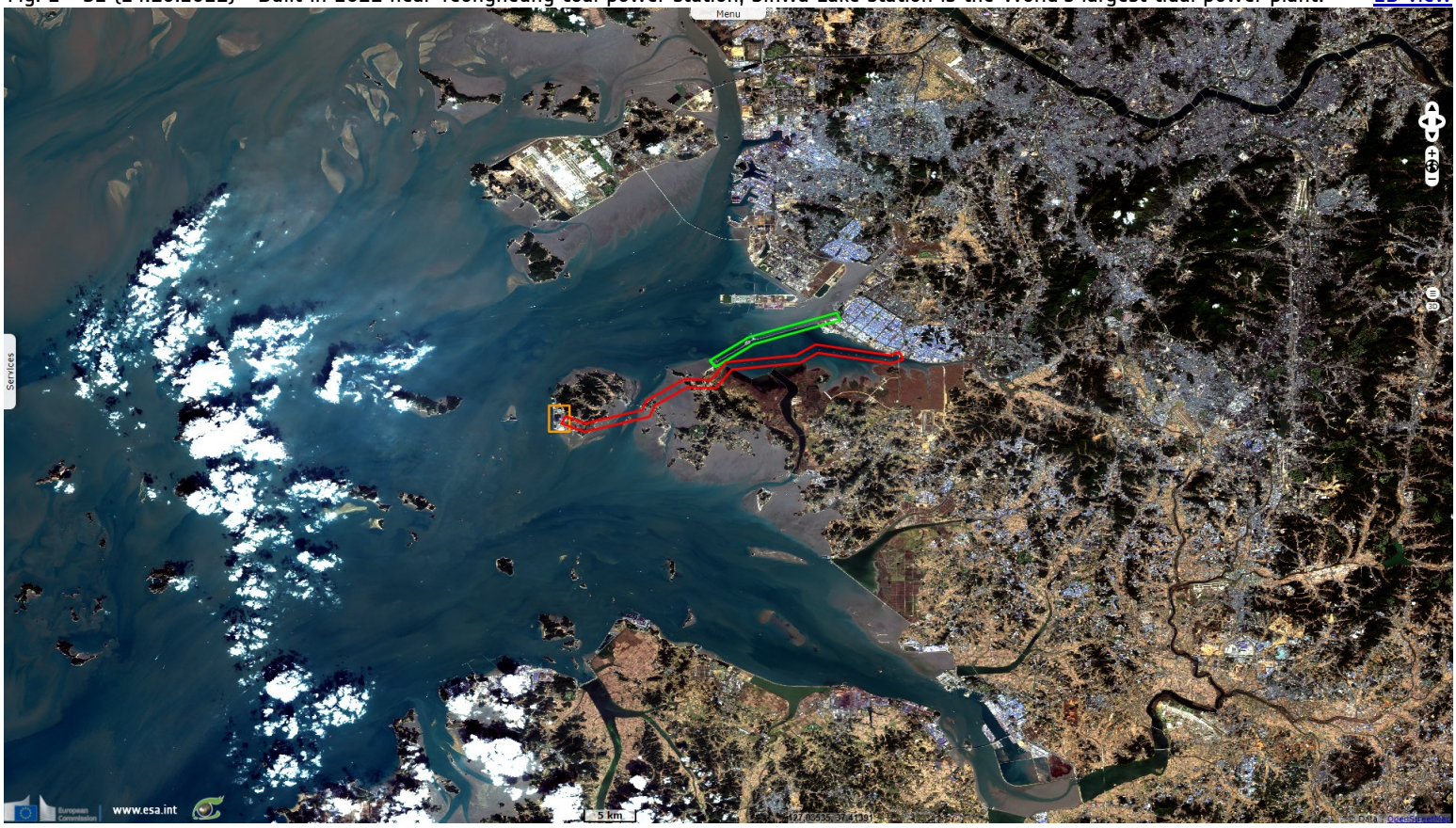
Landsat TM acquired on **14 May 1985** at 01:40:56 UTC
Sentinel-1 CSAR IW acquired on **06 January 2017** at 21:39:24 UTC
Sentinel-1 CSAR IW acquired on **01 February 2018** from 21:31:15 to 21:31:40 UTC
Sentinel-1 CSAR IW acquired on **25 February 2019** at 21:39:42 UTC
Sentinel-2 MSI acquired on **24 October 2021** at 02:17:49 UTC

Author(s): Sentinel Vision team, VisioTerra, France - svp@visioterra.fr

Keyword(s): Coastal, infrastructure, power plant, renewable energy, coal power, tide, South Korea

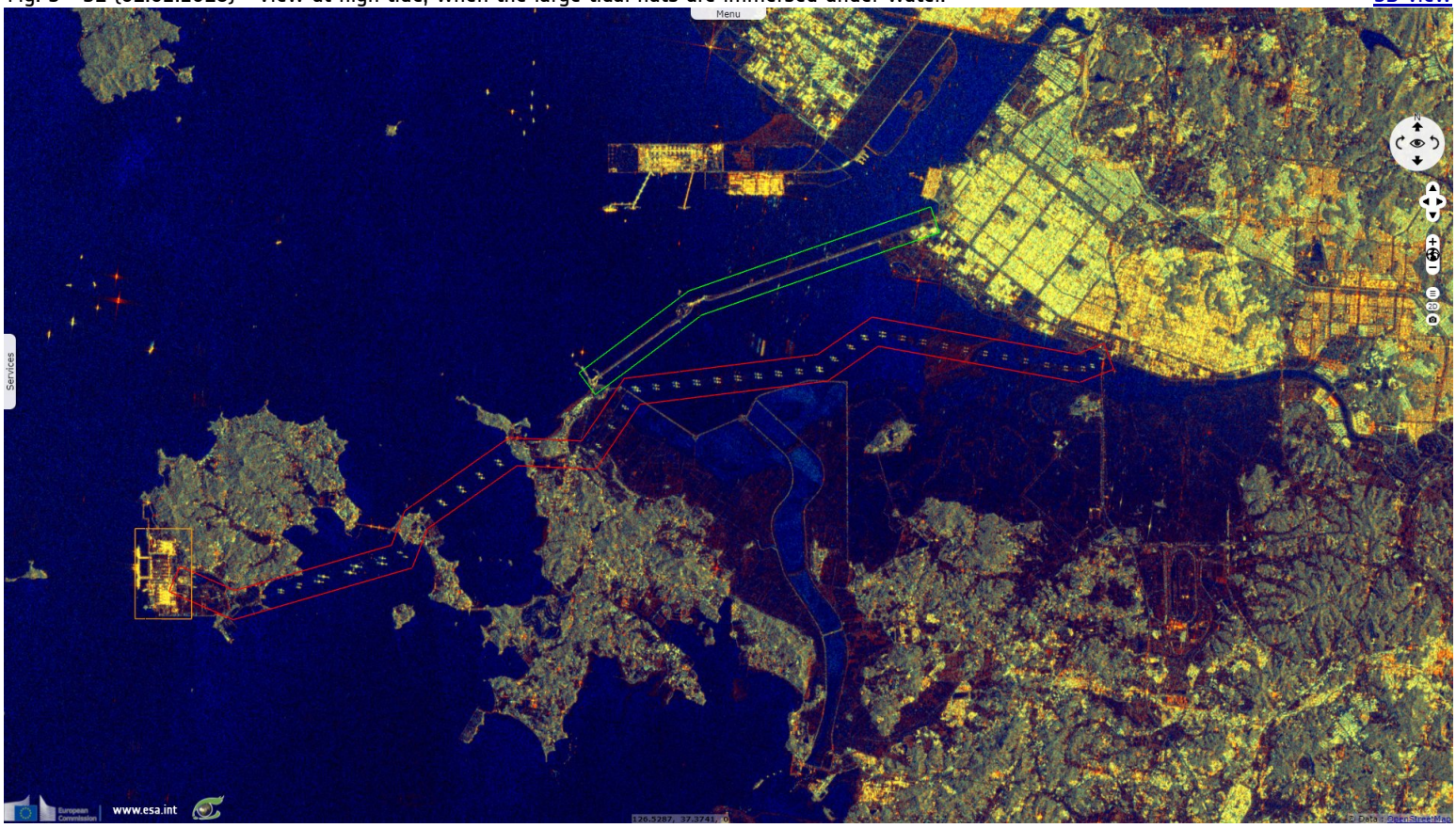
Fig. 1 - L5 (14.05.1985) - View of Daebudo island, near Seoul, South Korea, before a seawall was built and land reclamation began. 2D view

Fig. 2 - S2 (24.10.2021) - Built in 2011 near Yeongheung coal power station, Sihwa Lake station is the World's largest tidal power plant. 2D view



The working basin area was originally intended to be 43 km² and has been reduced by land reclamation and freshwater dykes to 30 km², likely to be reduced further.

Fig. 3 - S1 (01.02.2018) - View at high tide, when the large tidal flats are immersed under water. 3D view



After the seawall was built in 1994, pollution built up in the newly created Sihwa Lake reservoir, making its water useless for agriculture. It improved after the reservoir was converted. The tidal barrage makes use of a seawall constructed in 1994 for flood mitigation and agricultural purposes.

Fig. 4 - S1 (25.02.2019) - Power is generated on tidal inflows only, and the outflow is sluiced away, i.e. as one-way power generation. 3D view 3D animation

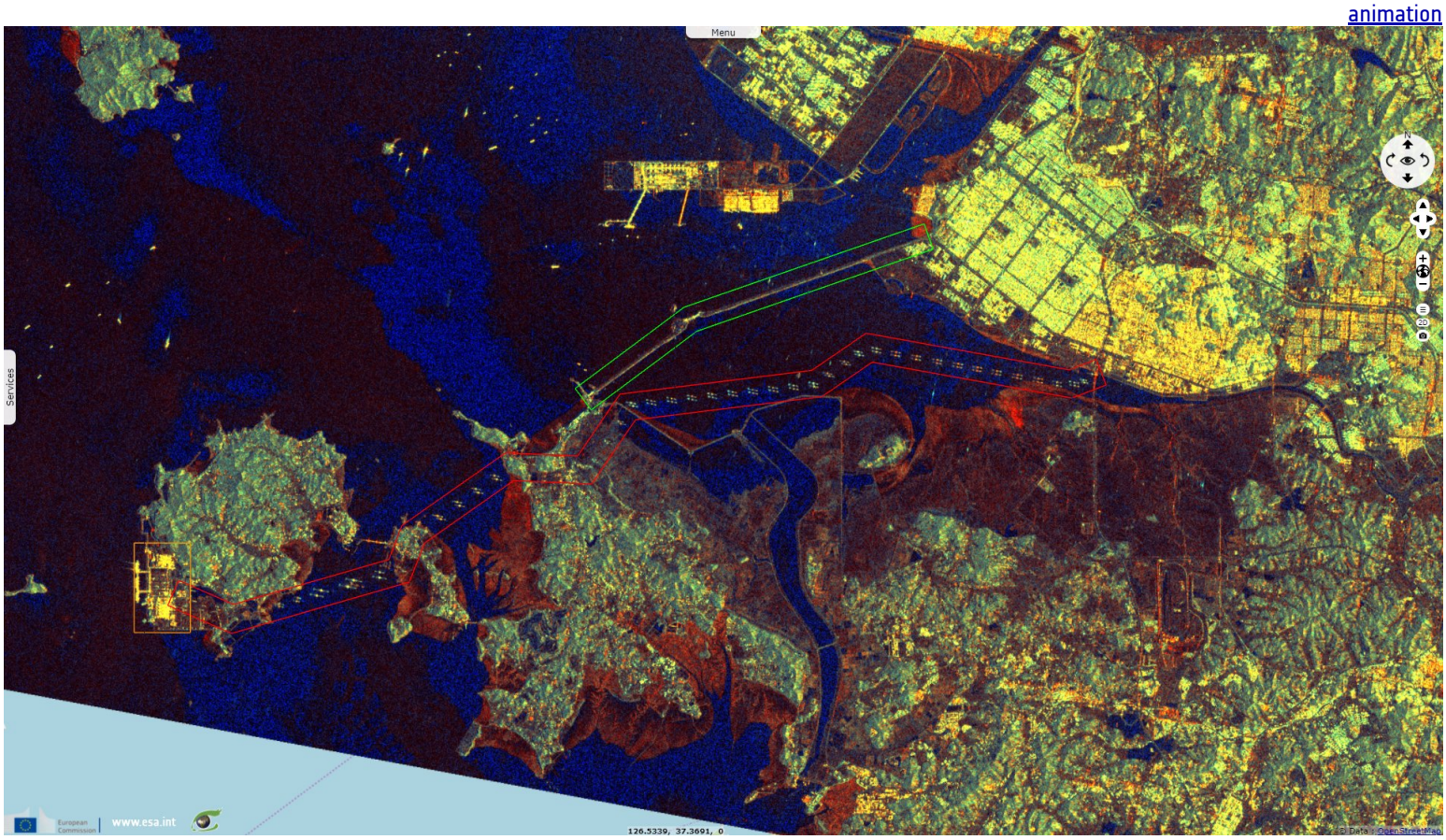


Fig. 5 - S2 (24.10.2021) - The station's mean operating tidal range is 5.6 m, with a spring tidal range of 7.8 m. 3D view

Requiring no fuel, it has a regular and predictable energy output. With a power capacity of 254 MW, the power plant generates 552 GWh a year with a capacity factor of 24.8%.

The views expressed herein can in no way be taken to reflect the official opinion of the European Space Agency or the European Union.
Contains modified Copernicus Sentinel data 2021, processed by VisioTerra.

More on European Commission space:						
More on ESA:	S-1 website	S-2 website	S-3 website			
More on Copernicus program:	Scihub portal	Cophub portal	Inthub portal	Colhub portal		
More on VisioTerra:	Sentinel Vision Portal	Envisat+ERS portal	Swarm+GOCE portal	CryoSat portal		

Funded by the EU and ESA SED-966-SentinelVision powered by VisioTerra