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Generating units

Por *webmaster*

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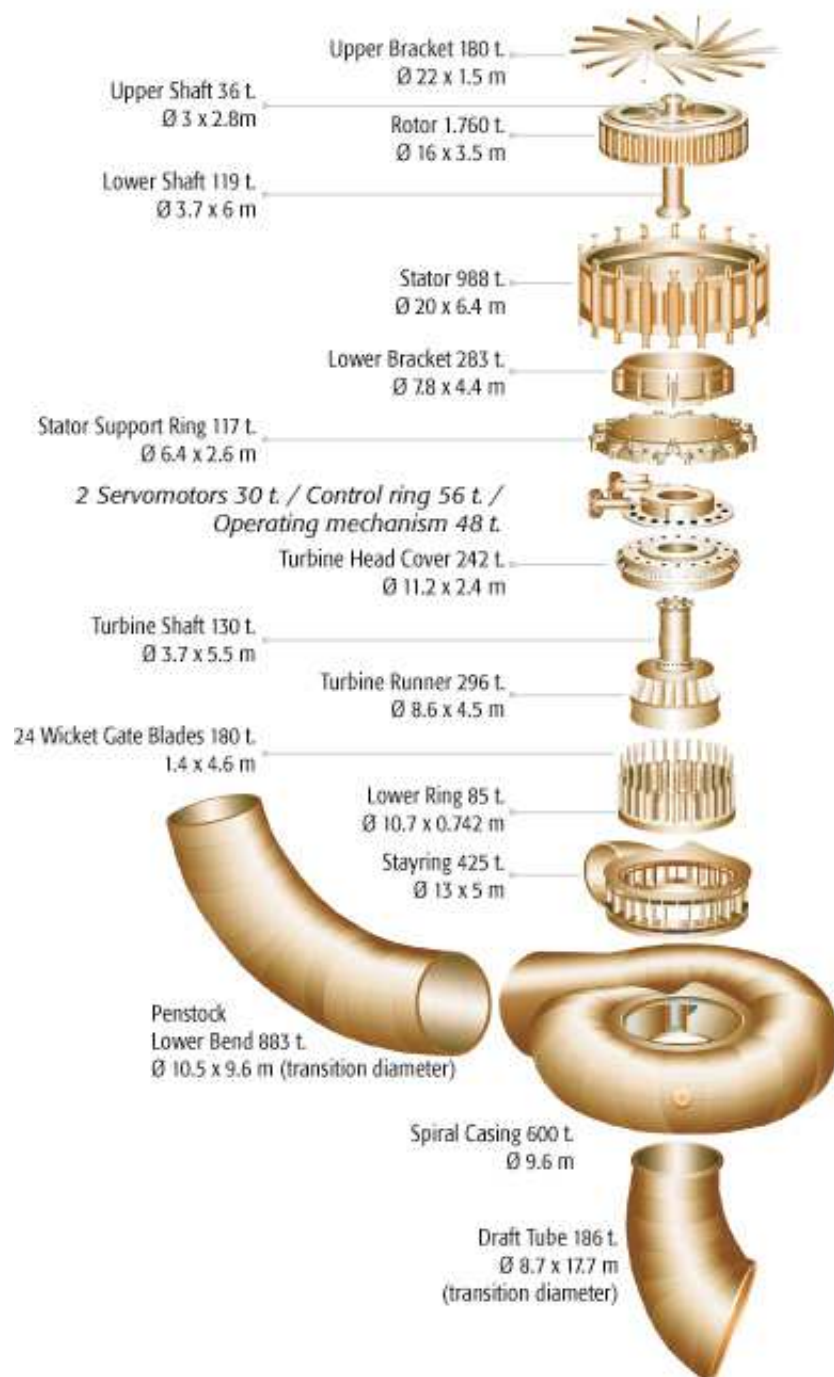
Itaipu has 20 generating units. The last unit installed started generating electricity in 2007.

Each one is capable of generating 700 megawatts, which is enough power to supply a city of 1.5 million people. Together, the 20 generating units total 14 thousand MW.

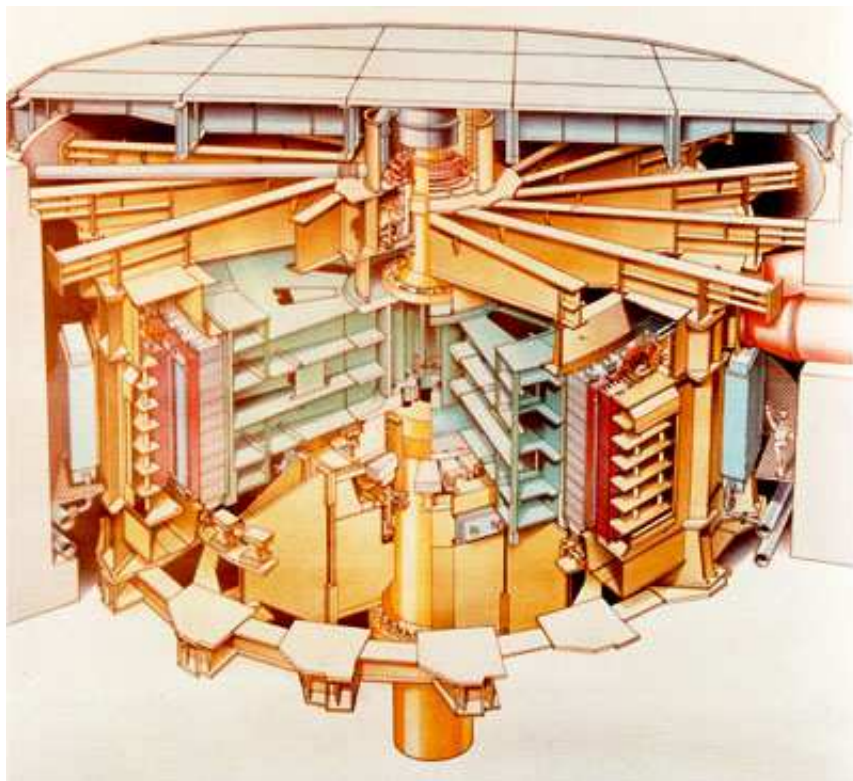
So as to give an idea of Itaipu's power, 12 of its units would be capable of supplying all the energy consumed in the three Brazilian southern states. Or yet, seven units would supply the entire electricity demand in the State of Rio de Janeiro.

Each generating unit comprises a generator, a turbine, and its ancillary equipment. Turbines are made of a series of blades connected to an axis, which is in turn connected to the generator. The pressure of the water going into the turbine via the penstock causes the axis to turn, which through an electromagnetic field induced inside the generator, generates electricity.

In other words, hydraulic energy is transformed into mechanical energy when water goes through the turbine, causing it to turn. In the generator, which is connected to the turbine, mechanical energy is transformed into electricity.

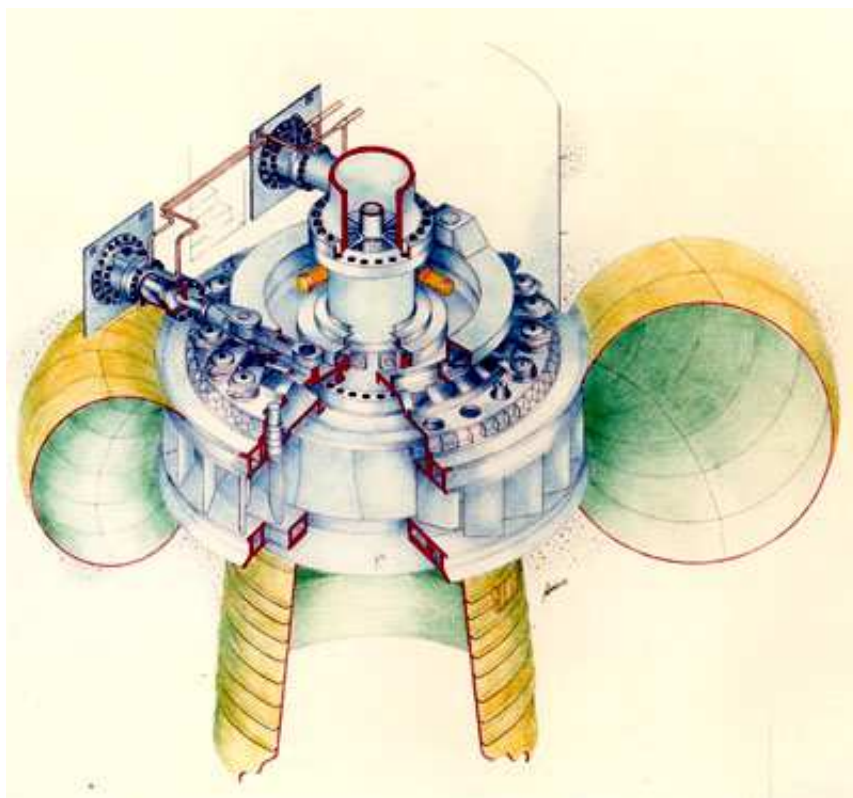


Generator



Quantity	20 units
60 Hz Frequency	10 units
50 Hz Frequency	10 units
50/60 Hz Rated power	823.6/737.0 MVA
Rated voltage	18 kV
Number of 50/60 Hz poles	66/78
Moment of inertia - GD2	320,000 t.m ²
50/60 Hz Power factor	0.85/0.95
Heaviest piece – rotor	1,760 t
Weight of each 50/60 Hz unit	3,343/3,242 t

Turbine



Quantity	20
Type	Francis
Unit rated power	715 MW
Project speed – 50/60 Hz	90.9/92.3 rpm
Project net head	118.4 m
Unit rated flow	645 m ³ /s
Heaviest indivisible piece – rotor	296 t
Weight of each unit	3,360 t

Foto:

 [geracao_unidades geradoras.jpg](#) ^[1]

Página Principal (CAPA)

Configurações se for uma capa.

Este conteúdo é uma capa?:

Não

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URL de origem: <https://www.itaipu.gov.br/node/621>

Links:

[1] https://www.itaipu.gov.br/sites/default/files/geracao_unidades_geradoras.jpg

[2] <https://www.itaipu.gov.br/node/565>