

## JSHP's Wind/Solar GSU Transformers & Skid/Containers



In past 10 year, JSHP annually delivers about 5,000 pad mount transformer. Most of them are conventional step down transformers. Total of 40,000+ units have been delivered. The site failure rate is less than 0.3% with main cause of the LV breaker & control.

For renewable applications, JSHP is number one wind GSU step up & grounding transformer supplier in China with about 25% market share, while JSHP delivers over 500+ units 110KV to 750KV power transformer and shunt reactors each year from same JSHP campus.

JSHP's Product line for renewable applications:

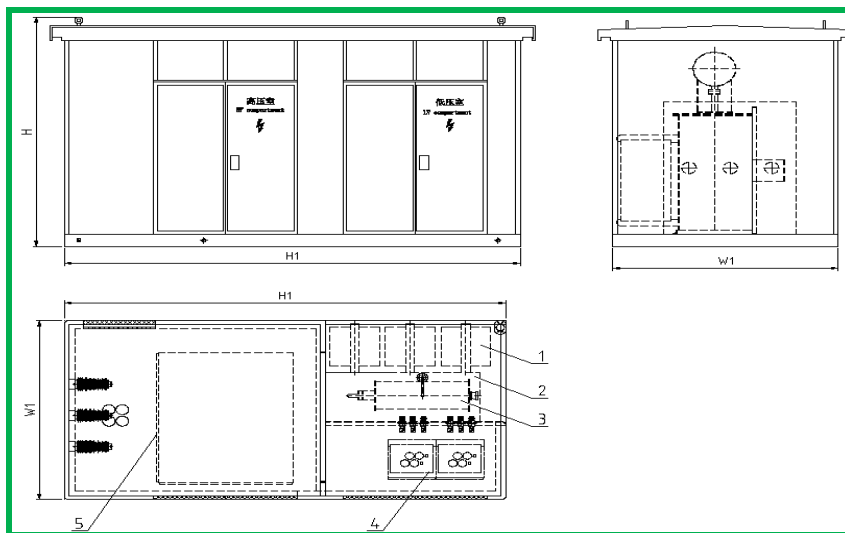
- **Pad-mounted GSUs up to 66KV, 15MVA;**
- **Off-shore Turbine Cell Transformers**
  - **Dry type or Expansion-proof JStrong™ Oil Transformers up to 66KV, 15MVA**
- **Design-build Skid/Container solution for various type converters**

The highlights of the JSHP GSU transformers/solution.

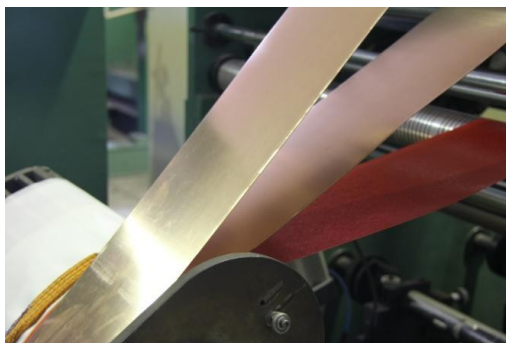
1. The Wind GSU HV has 200 kV BIL for 35KV GSU.
2. Disk windings with copper conductor, **patented multi-layer/section winding to reduce voltage stress**
3. The insulation with class H material
4. Avoiding the harmonics impact during the design with extra temp rise, extra loss, etc per IEC 60076-16:2011- Power transformers for wind turbines applications.

5. Vacuum oil filling to reduce the PD
6. Careful choice of the transformer oil to reduce the gases
7. Design & supply Skid type/container integrated station
8. Explosion - proof design for off-shore cell application - passed the arcing explosion test !
9. **New factory shops expansion to have capacity 1,000 skid/containers delivery per month by 2021**

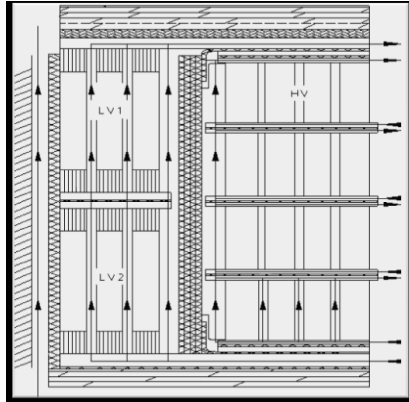




Skid/Container design-build for various converters



LV Insulation with resin impregnated cloth with class H glue , 3.5 hours 140C drying process



The continuous HV windings with extra two layers enforcing/sections with JSHP patented technique



Workmanship: guarantee the displacement in 1mm



HV Side:



LV Side:



Coils:



Vapor Phase Drying





Cell Transformers: Explosion Proof JStrong™,

Dry Type



### Container-type integrated station for Solar PV application

