

## **OGRES: Optimised Gas REservoir Simulation tool**

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### **Abstract**

In cooperation with EDF and CNPC, OGRES monitoring software has been developed and successfully applied on many UGS site, giving great results.

The proposed NARMA OGRES project/software achieved spectacular results over various cavities for pressure and temperature prediction purpose.

Fully supported by NOXDIA (IT development) & FACIES (FAvret Consulting In Energy and Services), and totally programmed using JAVA and O&M oriented, it provides:

- Wellhead/Casing shoe/Cavern condition using top-down approach,
- Identify any inconsistencies / technical inconsistencies in surveys,
- Diagnosis the reasons of inconsistencies (leaks, creep).
- Follow up of mining permit constraints,
- A global view and easily generate reports of the activity of your caverns,
- Estimate of the useful guaranteed, interruptible & ultimate volumes of caverns or group of caverns,
- Max / Min performance daily estimations,
- Injection-production simulations of cavern or group of caverns.

Very soon, it will give you on your PC, tablet or smartphone:

- Fully automated matching capacities,
- Power and gas consumptions estimates,
- Brine Compensation capabilities,
- Pipeline system modeling,
- Physical modeling implementation in order to have a complete classical bottom-up approach,
- Big Data (for CPU demanding calculations) and IA developments (especially for leak/creep tracking) making OGRES more efficient,
- Compatibility with other types of oil&gas assets and other domains/process (Advanced NARMA models; note: the NARMA model structure chosen already works with aquifer UGS or gas fields simulation ...) ...

**Key words:** PVT, thermodynamic modelling, gas storage, subsurface integrity management