

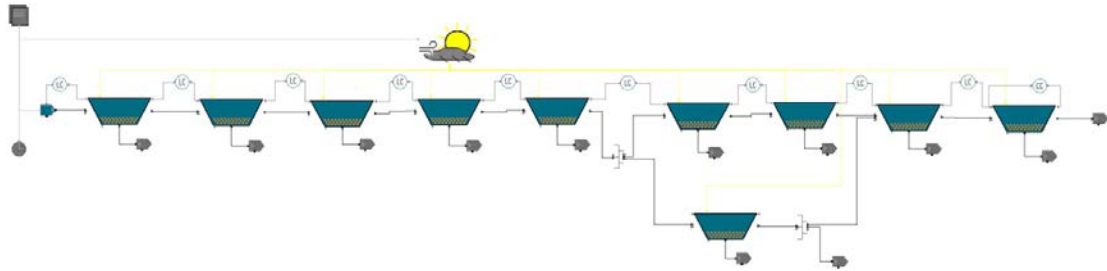
# gPROMS SOLAR EVAPORATION POND MODELING

Improving Li yields by optimizing design and operating schedules

Mechanistic modelling of solar ponds, salt production and salt purification



Model libraries for the mining industry provide sophisticated mechanistic models to facilitate workflows for design and optimization of brine mining operations.



## Solar pond network modeling capabilities

The dynamic solar pond model can be used to perform risk-free analysis of various what-if scenarios on any desired KPIs (example: Lithium yield). This includes:

- Studying effects of variations in climate and solar radiations throughout the year on the evaporation of the brine and salt precipitation
- Management of brine flow and level
- Predictions for optimal harvest time and volumes

Whether harvesting lithium, potassium, or any number of other salt species, gPROMS integrates with the most advanced and robust physical properties packages, giving you the power to understand the feasibility of product quality, efficiency, and financial goals.

The major advantage of modeling these operations in the gPROMS environment is the utilization of the powerful solvers which can be used to perform:

- Flowsheeting and simulation
- Global System Analysis
- Model validation
- Optimization

## Salt production and purification

PSE offerings extend beyond salt precipitation operations into the post processing of harvested salts and minerals reducing the financial and operational risks associated with these processes. The libraries enable efficient and effective design, optimization and operation of processes that include:

- Leaching
- Fluid separation & crystallization
- Filtration & drying
- Granulation
- Blending

## What PSE offers:

- Bespoke model design and consulting services
- Training for utilization and optimization of gPROMS modeling tools
- Training for process and flowsheet design



The Advanced Process Modeling Company

# g|PROMS

The gPROMS equation-oriented platform provides the underlying capabilities that enable all PSE products to deliver high-value applications:

## Process modeling

- Equation-oriented solution power
- Custom model construction
- Steady-state and dynamic simulation and optimization
- Advanced parameter estimation

- Powerful optimization, including mixed-integer
- Global system analysis
- High-performance computing

## Materials modeling

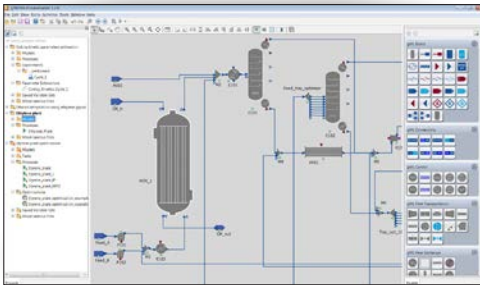
- Molecular & ionic species
- Complex species & mixtures
- Gas, liquid, solid phases
- Phase & reaction equilibrium

**g|PROMS** ADVANCED PROCESS AND MATERIALS MODELING PLATFORM

“ Key deciding factors for us were the sophistication of the gPROMS modeling products and PSE’s single integrated platform ”

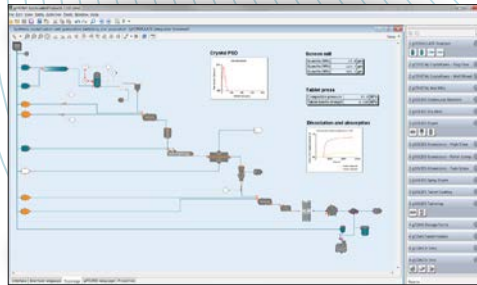
Dorus van der Linden  
DSM

## g|PROCESS



gPROMS ProcessBuilder® provides all the functionality of traditional flowsheeting simulators plus high-fidelity reactor, adsorption and membrane model libraries.

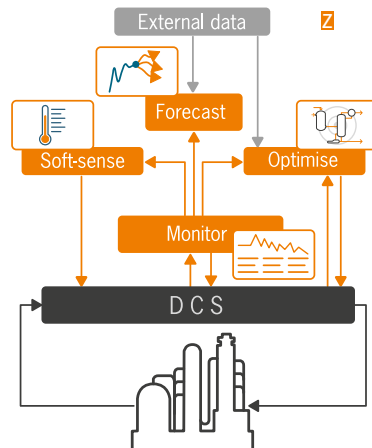
## g|FORMULATE



gPROMS FormulatedProducts® is a unique environment for integrated design and optimization of formulated products and their manufacturing processes.

## g|OES

gPROMS Operational Excellence Solutions provide advanced real-time monitoring, forecasting, optimisation and operations dashboard capabilities using high-fidelity models linked to the plant automation system or historian.



**PSE** The Advanced Process Modeling Company

[psenterprise.com](http://psenterprise.com)

Operations in UK, USA, Japan, Korea, China, Taiwan and Thailand.

PSE Inc.  
t: +1 973 290 9559  
e: [info@psenterprise.com](mailto:info@psenterprise.com)