



Scovan.ca



An Innovative Carbon Reduction Technology

HipVap brings game changing opportunities to industry through its innovative produced water steam generation system that is suited for brownfield or greenfield projects. It provides reductions in costs and GHG emissions while allowing for flexible asset development along with a full suite of bolt-on options for any operation including small and large scale, well pad or CPF based, steam generation.

HipVap compared to a OTSG + WLS

**71%
REDUCTION**
in CO₂ Emissions associated
with Unproductive
Energy Input*

**34%
REDUCTION**
in overall Project
Surface Footprint

**20%
REDUCTION**
in Capital Costs

*Energy input into the system that did not produce steam.



How the Technology Works

HipVap technology eliminates the need for conventional SAGD water treatment processes, including produced water cooling, de-oiling and boiler feed water treatment systems, generating steam directly from produced water. These energy intensive systems are maintenance intensive and costly, while HipVap offers operational cost savings, capital cost savings, improved plant up-time and more importantly a reduced environmental footprint.

HipVap circulates produced water in a loop, where 20% quality steam is generated and circulated to a steam separator. A key aspect of HipVap is that the boiler tube heat flux is maintained at relatively low levels with relatively low temperatures, chelants are added to keep calcium and magnesium in suspension, and the process is operated at a pH where silica remains dissolved. Any scale that forms is mechanically removed on line by a brush system. The circuit is operated on a net basis of up to 98% produced water conversion (i.e. 2% blowdown).

Proving the Technology

HipVap's 3-inch tube commercial-scale demonstration project is taking place at Strathcona's Lindbergh SAGD facility with the support of grant funding from both Alberta Innovates and Clean Resource Innovation Network (CRIN).

“ Technology and innovation helped us unlock our energy resources, and will continue to be essential to push us forward. Time and again, Alberta's innovators are making ground-breaking discoveries and commercializing the solutions our energy industry, and the world needs. This project demonstrates the entrepreneurial spirit and innovation excellence Alberta is known for.

—Doug Schweitzer, Minister of Jobs, Economy and Innovation, commenting on HipVap Technology's Commercialization Prototype Demonstration Project.

