

# **Realizing the Value of Digitalization for Oil & Gas Production**

---

the necessity of Rigorous Separation Modelling

# Outline



- Production, Constraints & Separation
- Facility & Optimization challenge
- Rigorous separation modelling in Digital Twin
- Reviewing current production constraint
- Using MySep software to Optimize
- Summary of business value



# Why can't facilities produce more ?



Facilities are constrained

Impacting production & revenue

Optimizing **separation** is key



# Separation is the **Heart** of **Production**



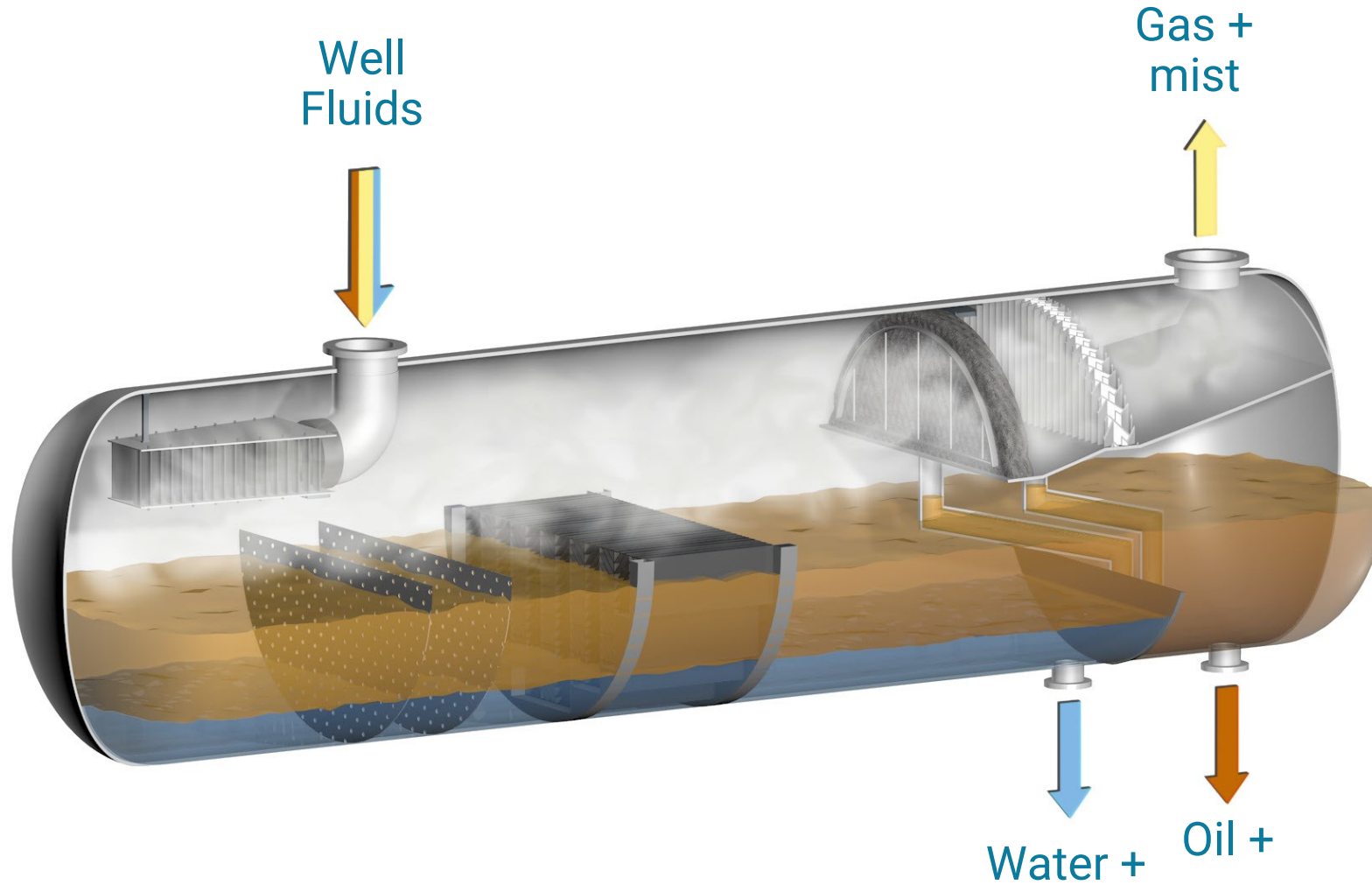
Onshore or offshore

Topsides and sub-sea

Gas-liquid & Oil-water



# Separation & Production



# Consider a facility

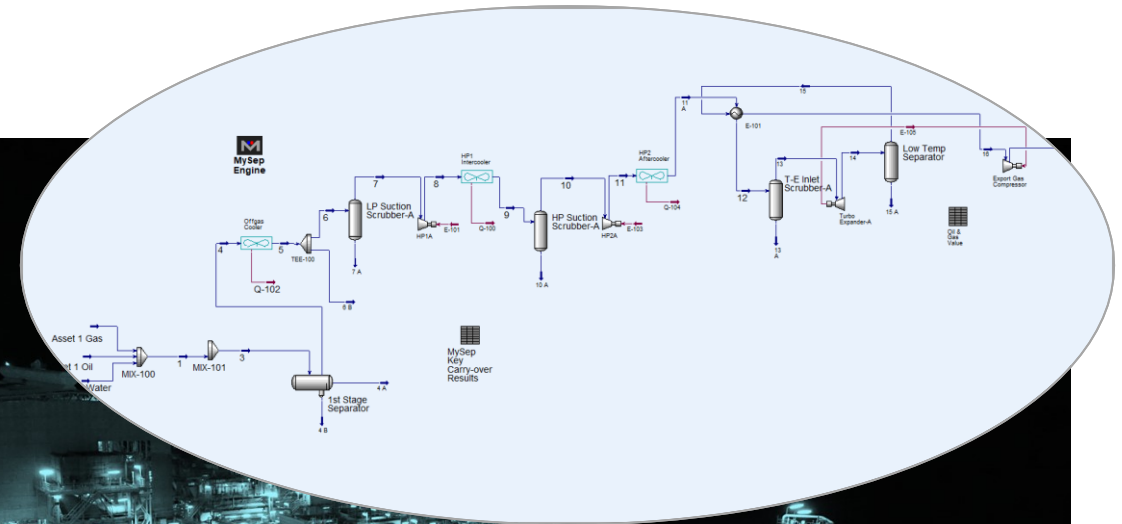


The main topsides process....

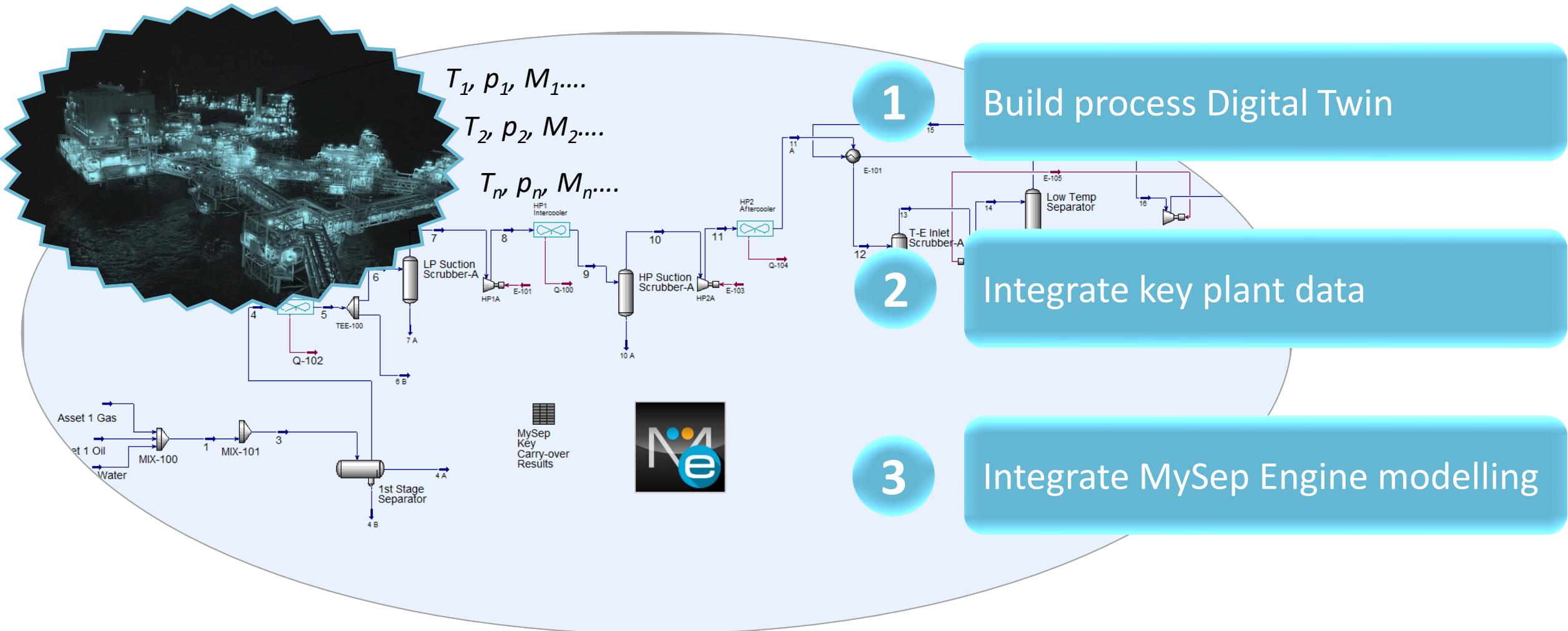
Oil: 74,000 bbl/day

Gas: 79 MMSCF/day

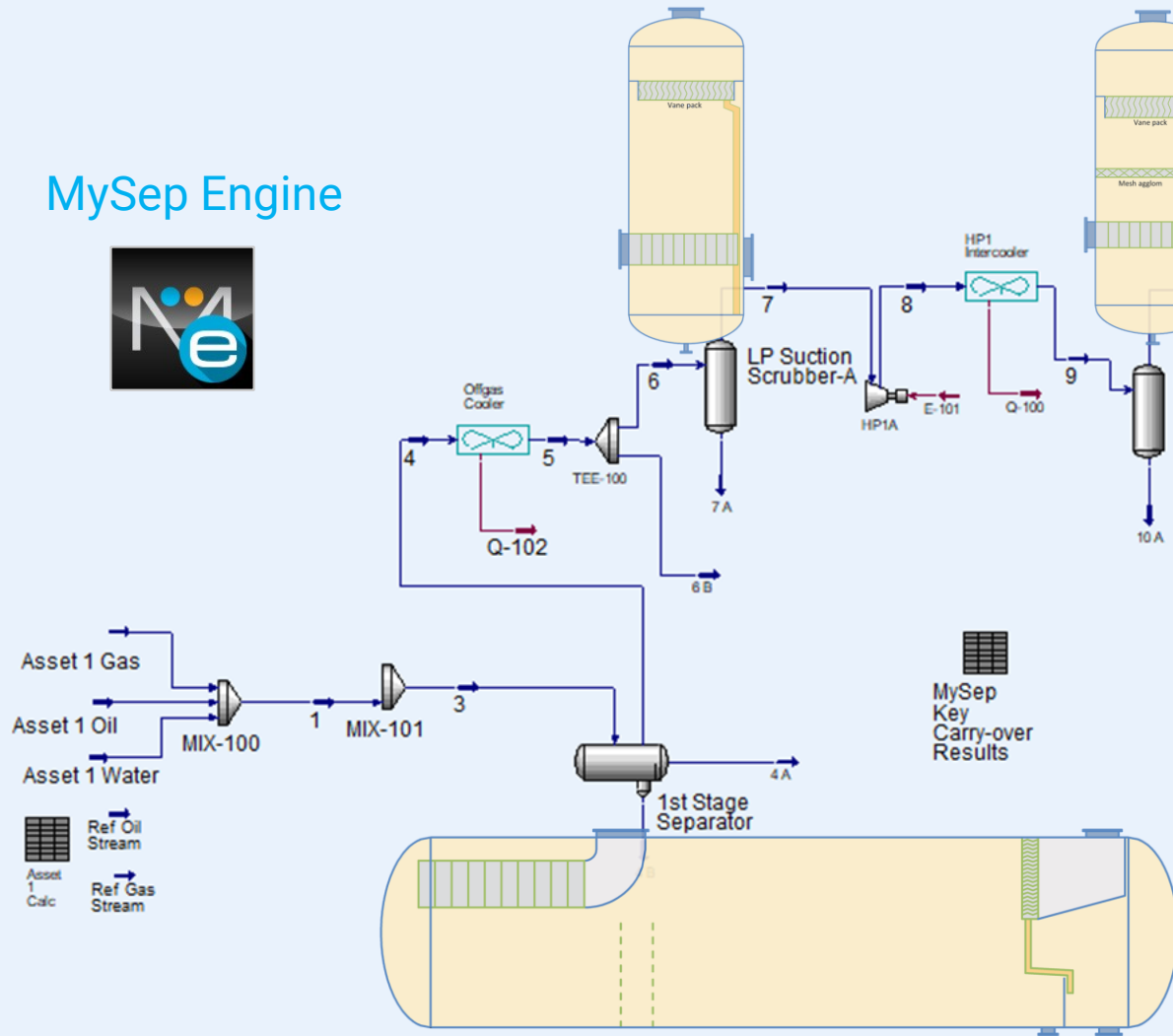
Production revenue  $\approx$  \$6.5 MM/day



# How to Optimize for more production ?



MySep Engine



MySep  
Key  
Carry-over  
Results

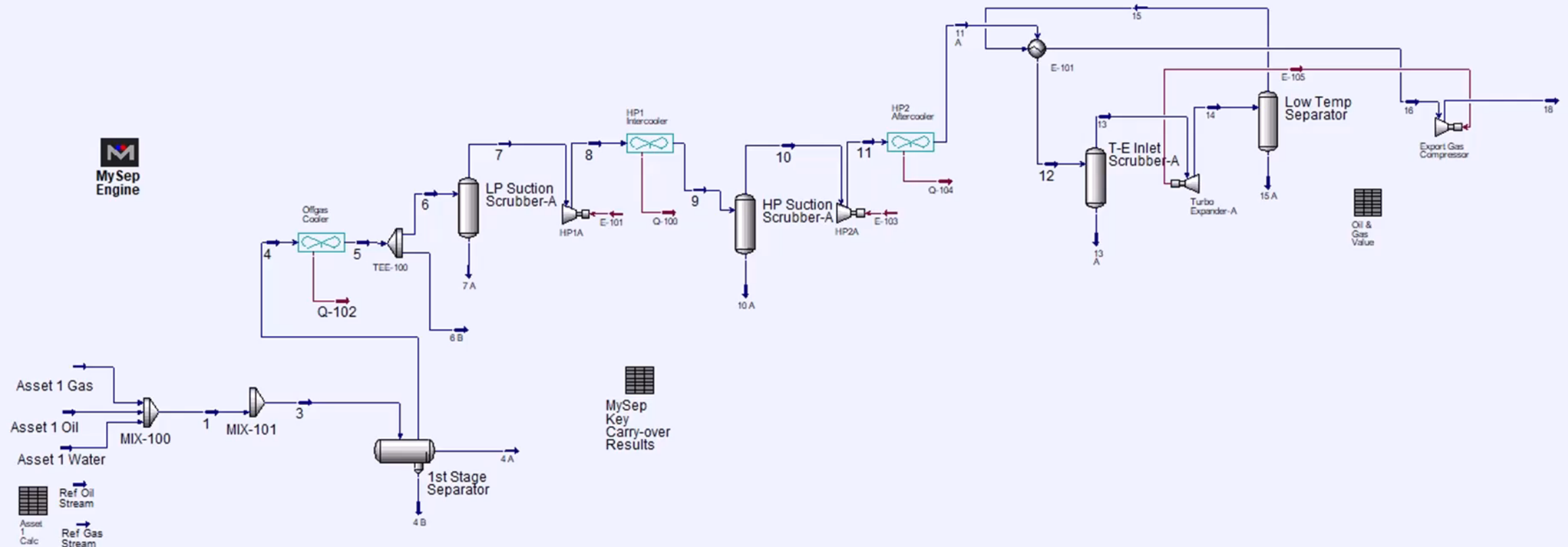
1 Simulation-based

2 Production Digital Twin

3 MySep Engine rigorous separator models

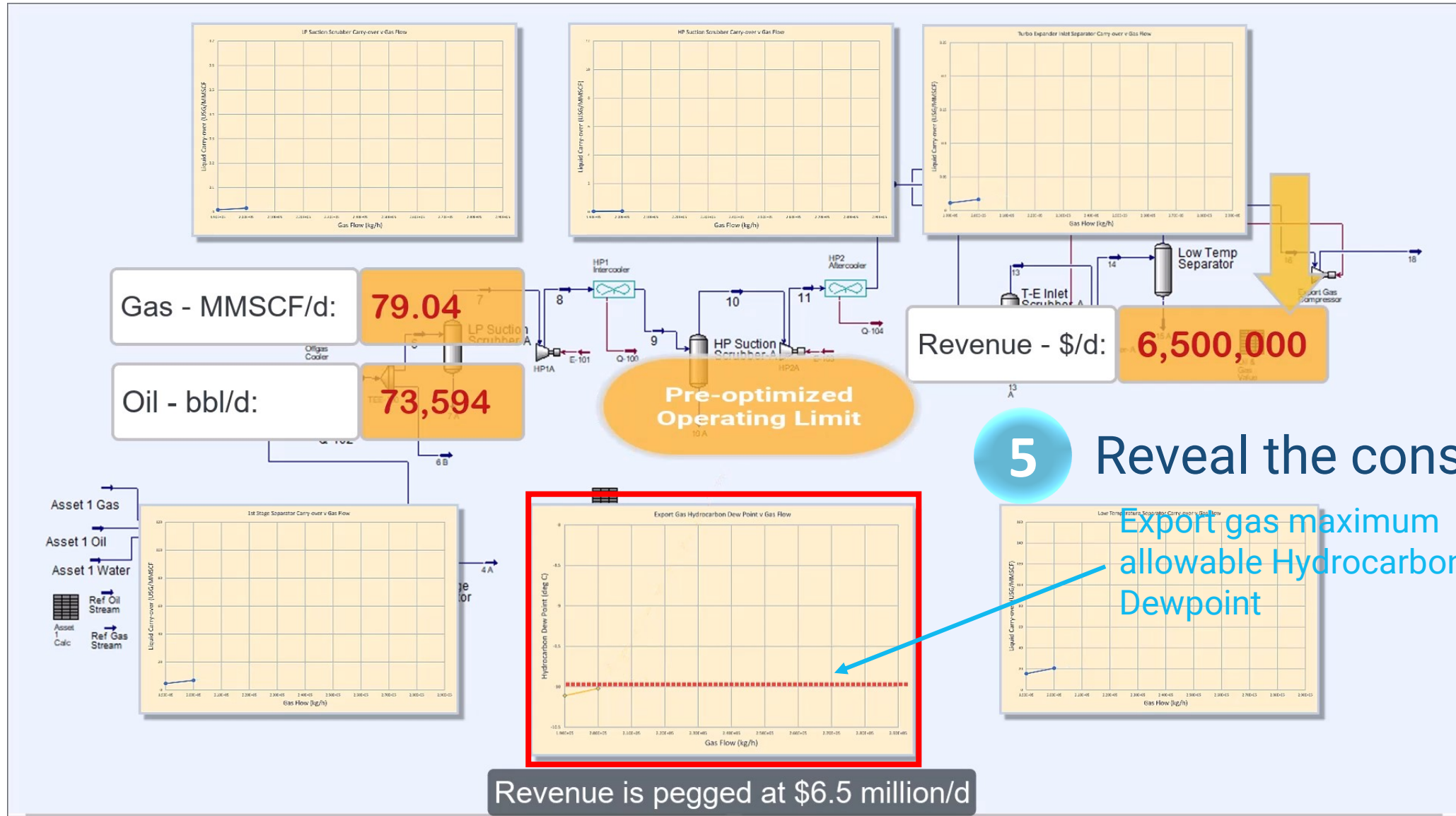


## 4 Evaluate existing operation



## 5 Reveal the constraints

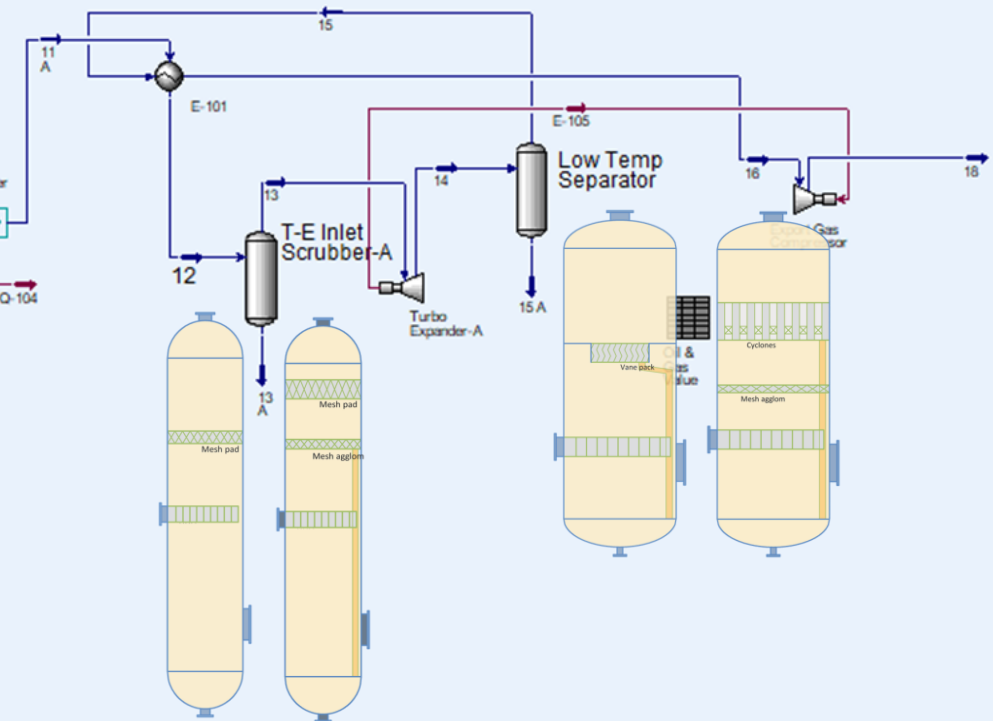
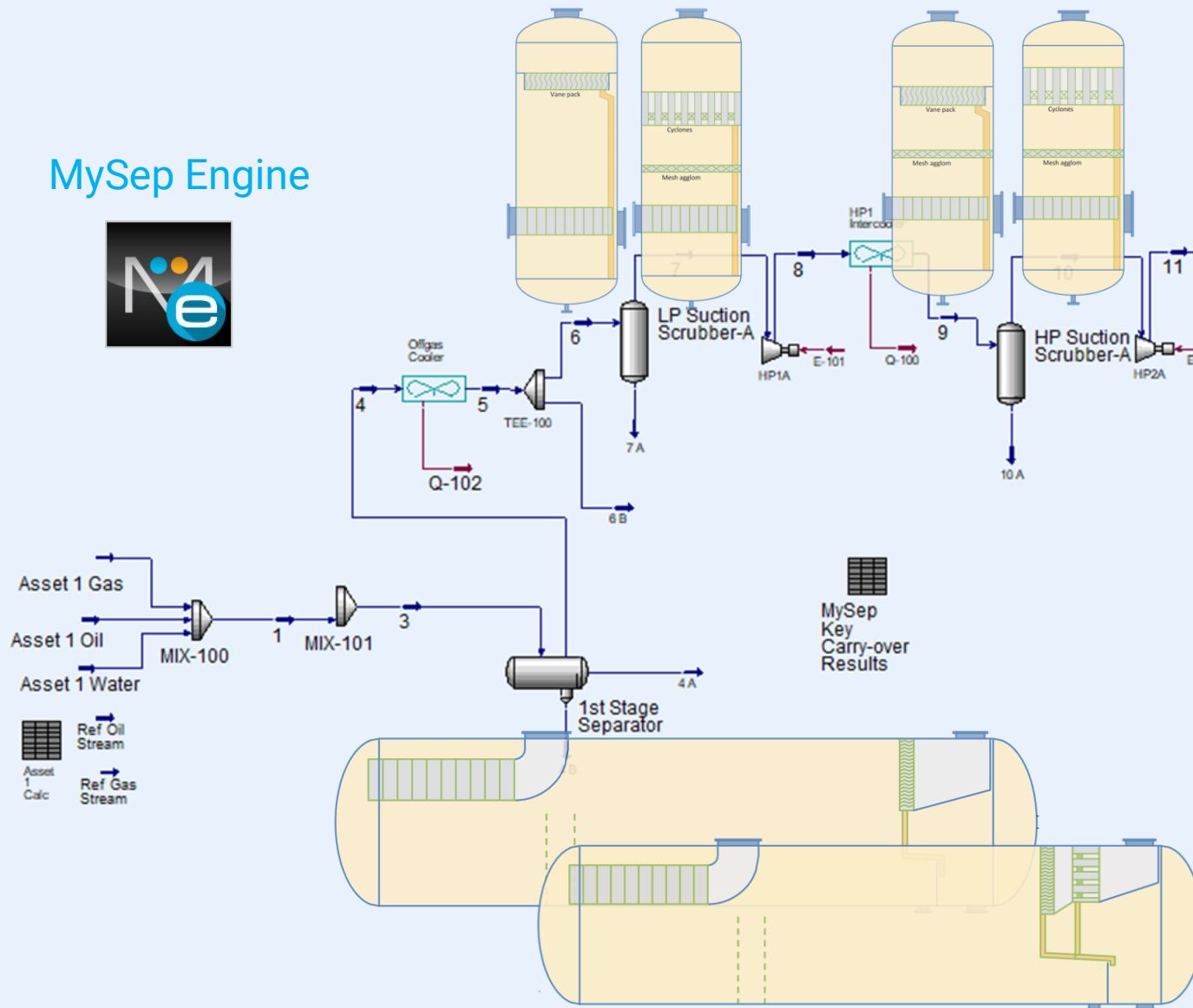
# Current Production Constraint



## 6

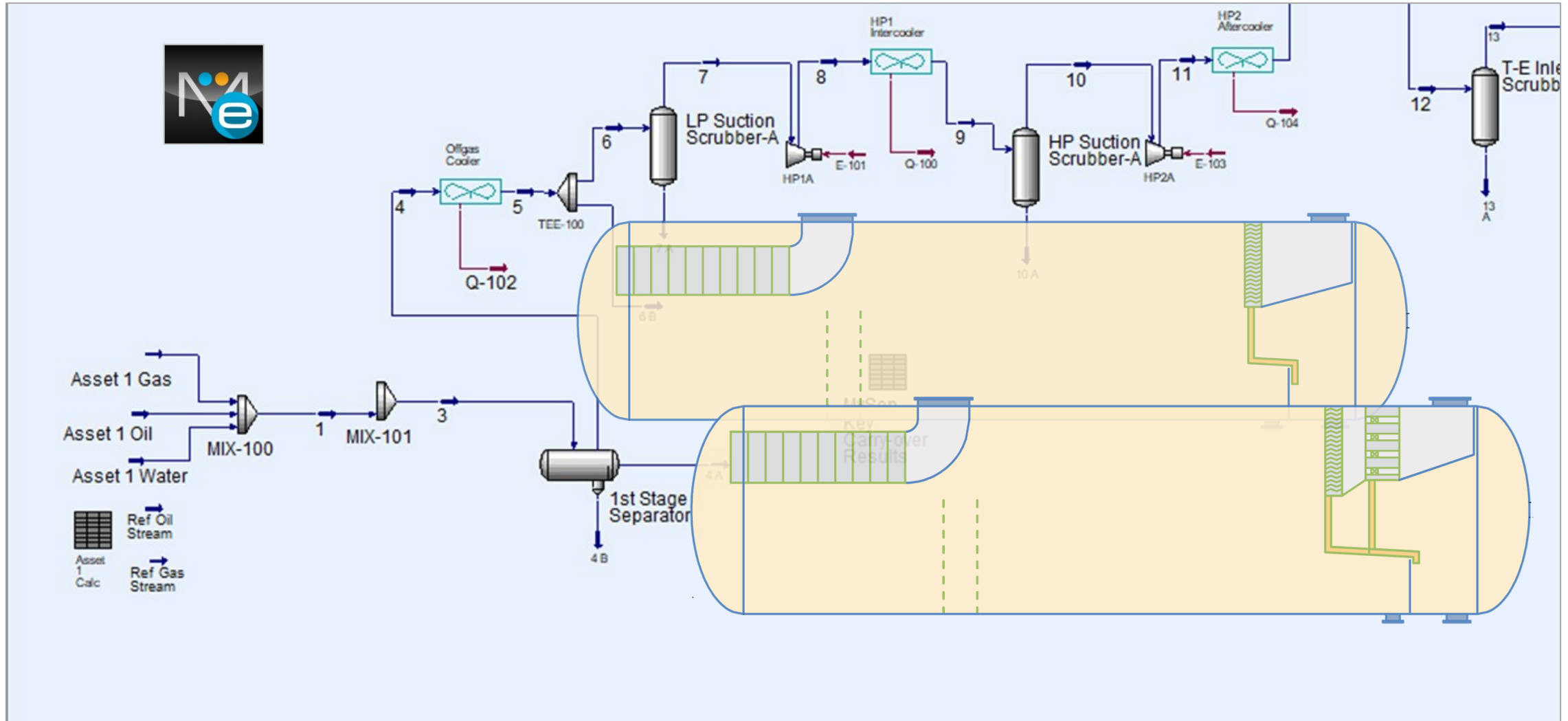
Optimize separator configurations  
with **MySep Studio**

MySep Engine



Retro-fit to existing vessels

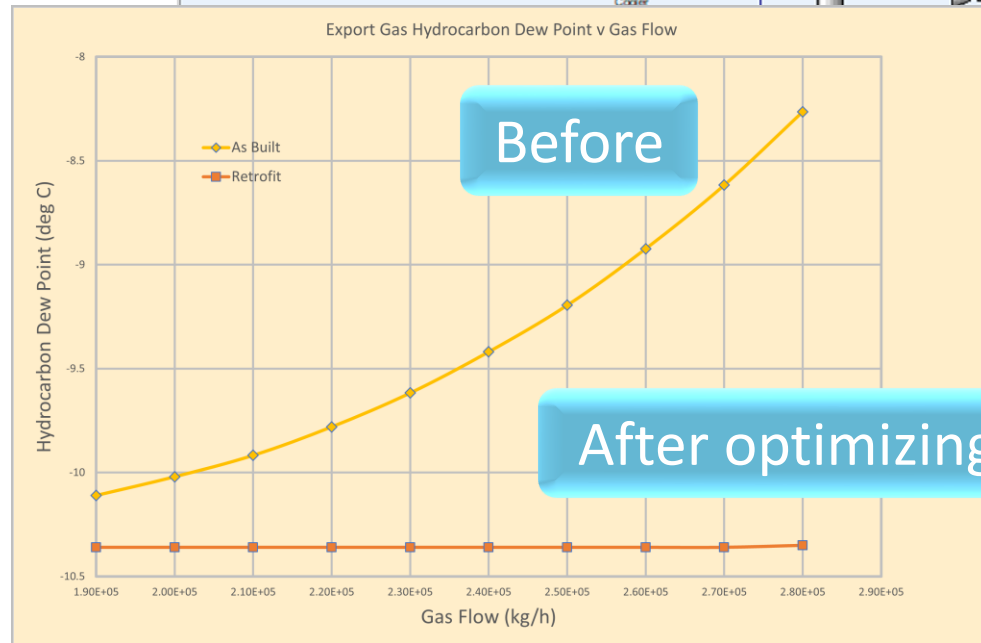
# Retro-fit Vessel Internals



# Optimized Separation



Digital Twin shows production no longer constrained by hydrocarbon dewpoint

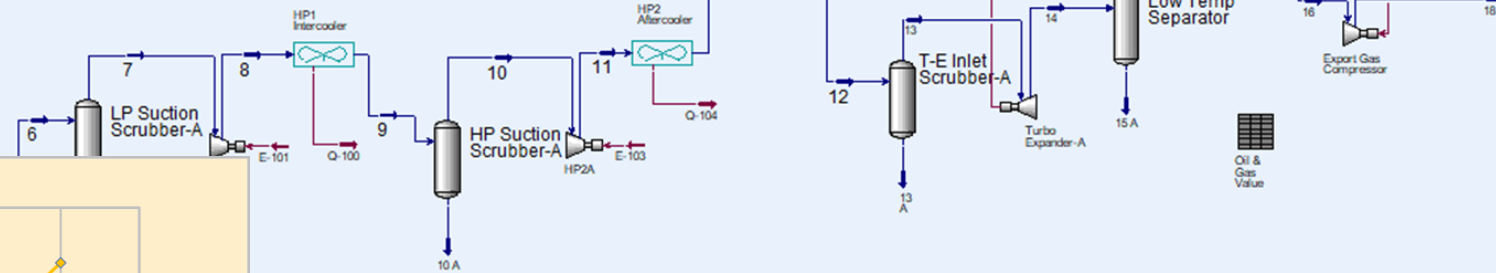


Before

After optimizing separation

MySep  
Key  
Carry-over  
Results

Production can increase up to **compressor capacity** constraint



Oil: 82,000 bbl/day

Gas: 88 MMSCF/day



# Summary of Digital Twin Result



**Before**

Oil: 74,000 bbl/day

Gas: 79 MMSCF/day

Revenue  $\approx$  \$6.5 MM/day

**After**

Oil: 82,000 bbl/day

Gas: 88 MMSCF/day

Revenue  $\approx$  \$7.4 MM/day

Increased Annual Revenue  $\approx$  \$325 MM

# Questions ?



[www.mysep.com](http://www.mysep.com)

[tom.ralston@mysep.com](mailto:tom.ralston@mysep.com)