




The Geothermal Production Challenge

30 March 2023 - Hans Sjerps

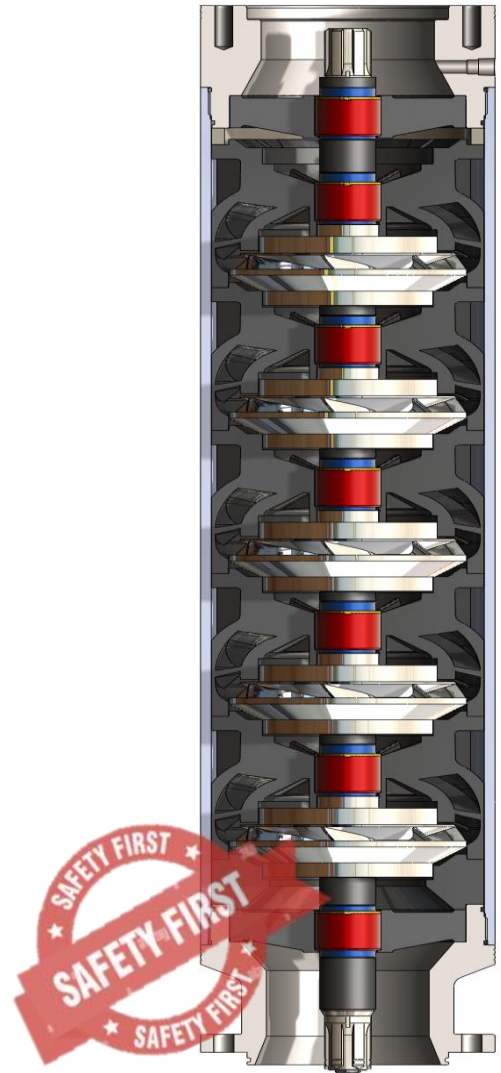


What needs to be done to unlock the geothermal potential successfully and what are the challenges to overcome?

- Bolted Bowl Pump in deep set Geothermal.
- Could break off due to lateral string movement
- May cause loss in hole and loss of well



HOUSING









Stand Alone Well



Drill

- 13-3/8" Carbon Steel tie back+inhibitor (Luttelgeest)
- 13-3/8" Internal GRE lined tie back (Vogelaer)
- 13-3/8"-13Cr POD (Delft)
- 10-3/4" GRE Lined. Drift: 9.22" (Maasdijk)



Test \$\$



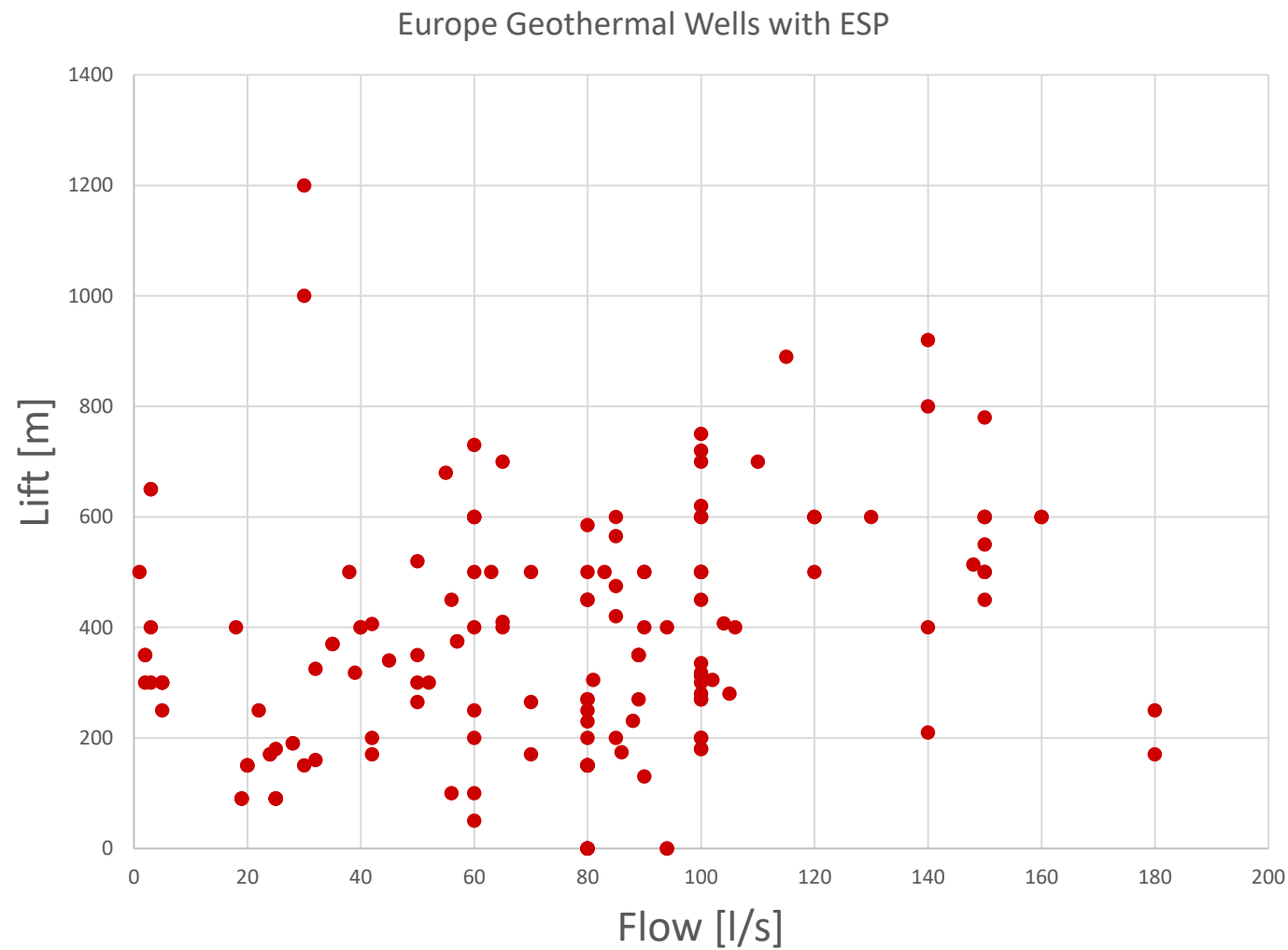
Maximal Drawn Down



Maximal Flow per well

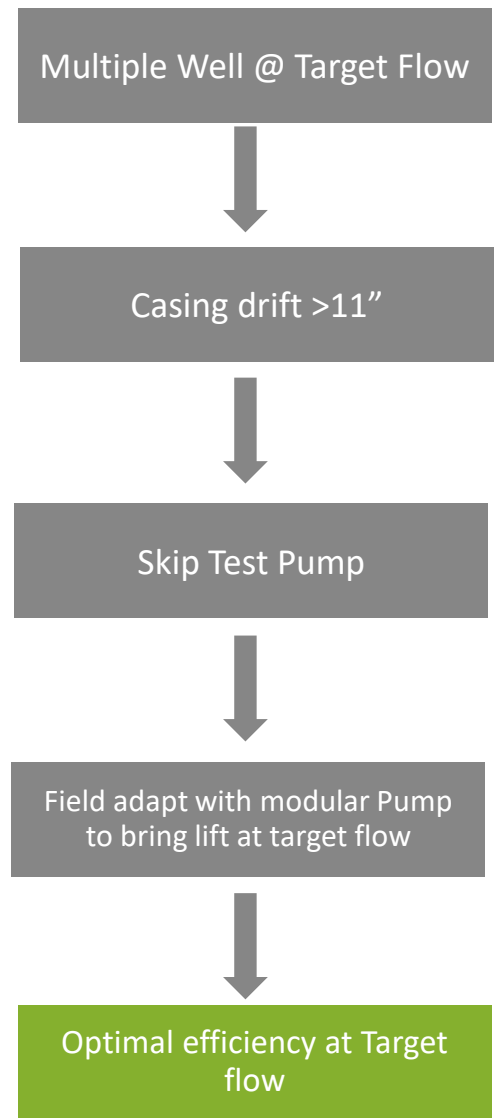
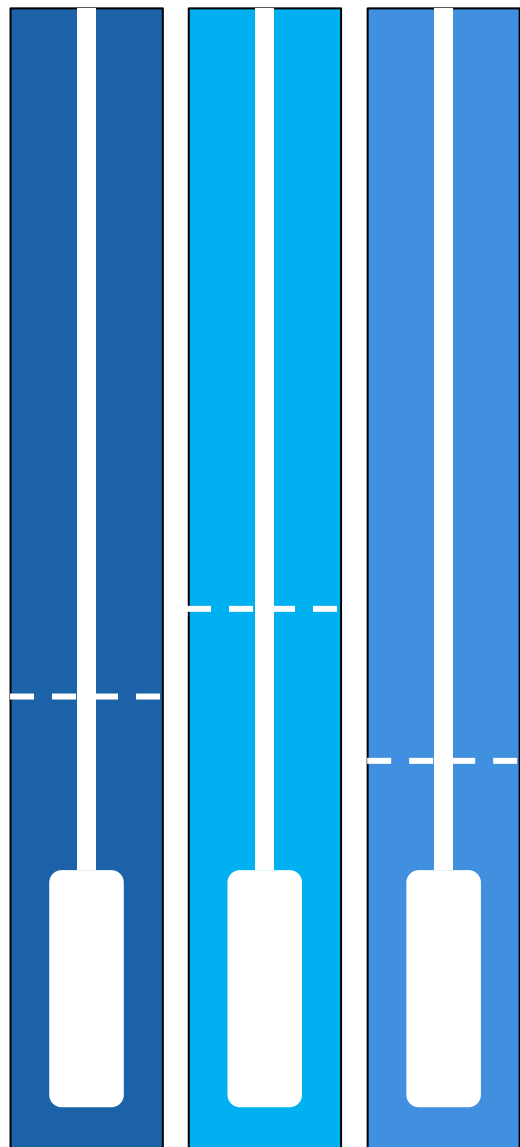


Different Pump per well

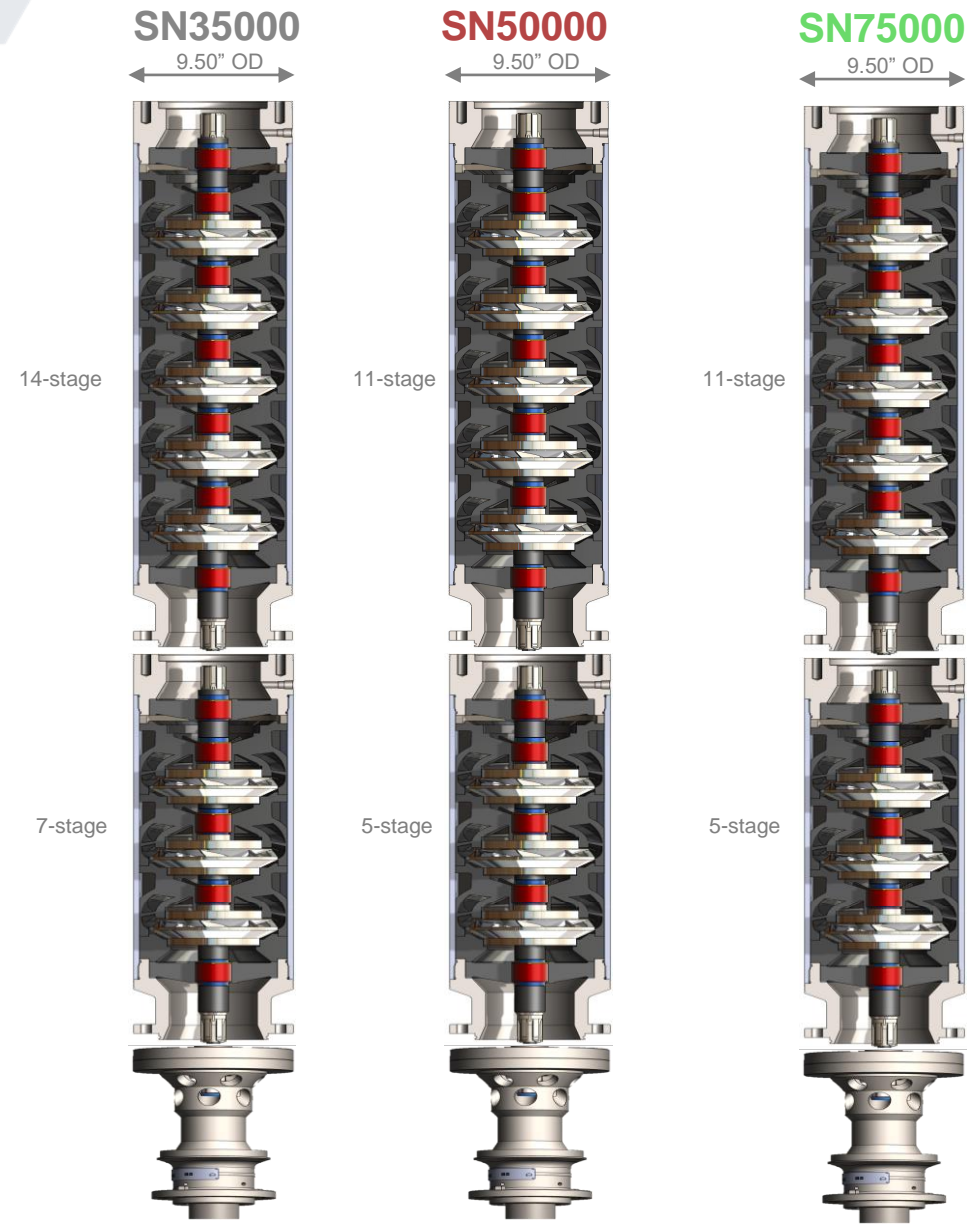


>200 wells
10-180 l/s
40-180 °C

30
different pump models

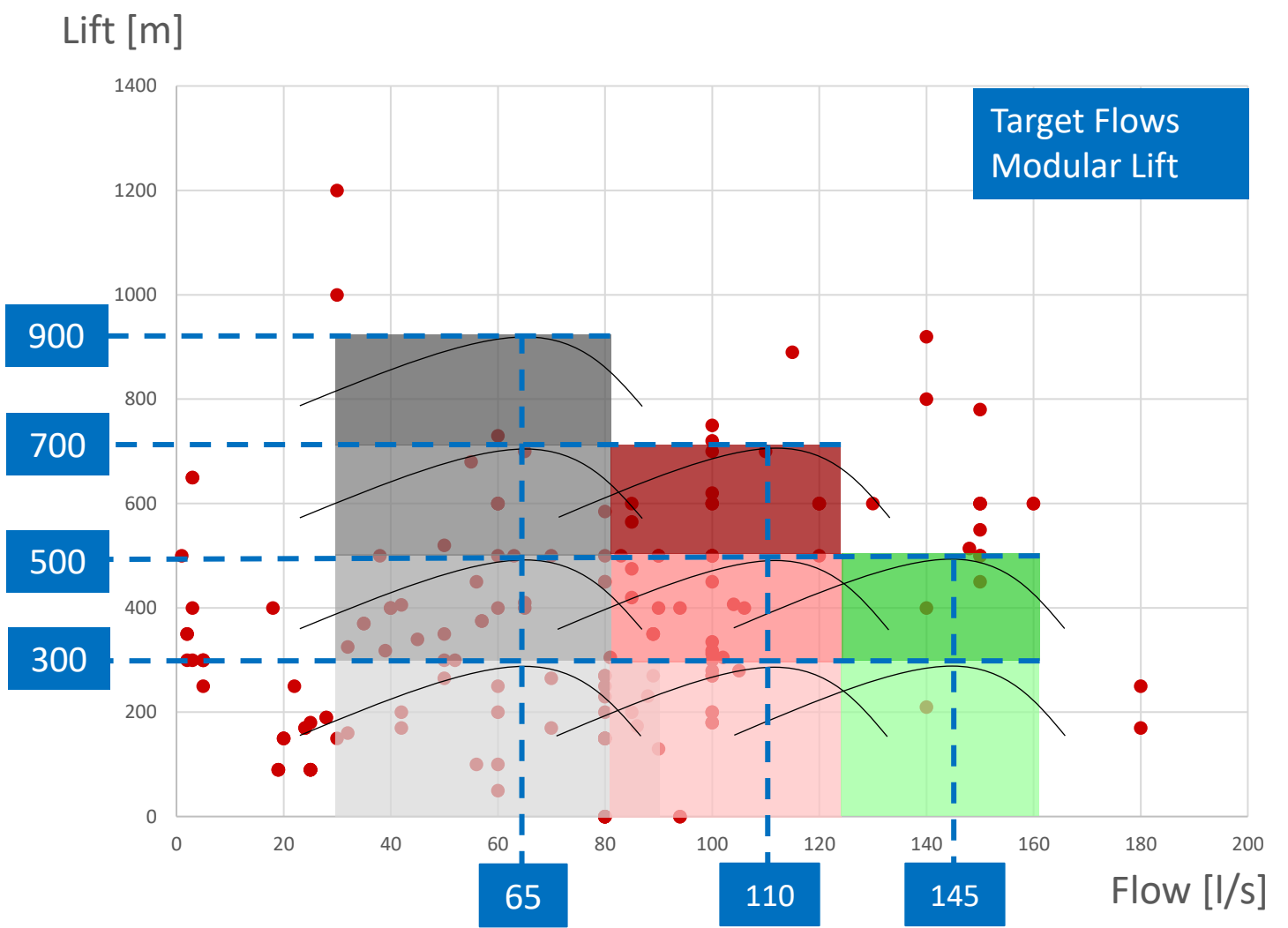


Standard Pump on all wells

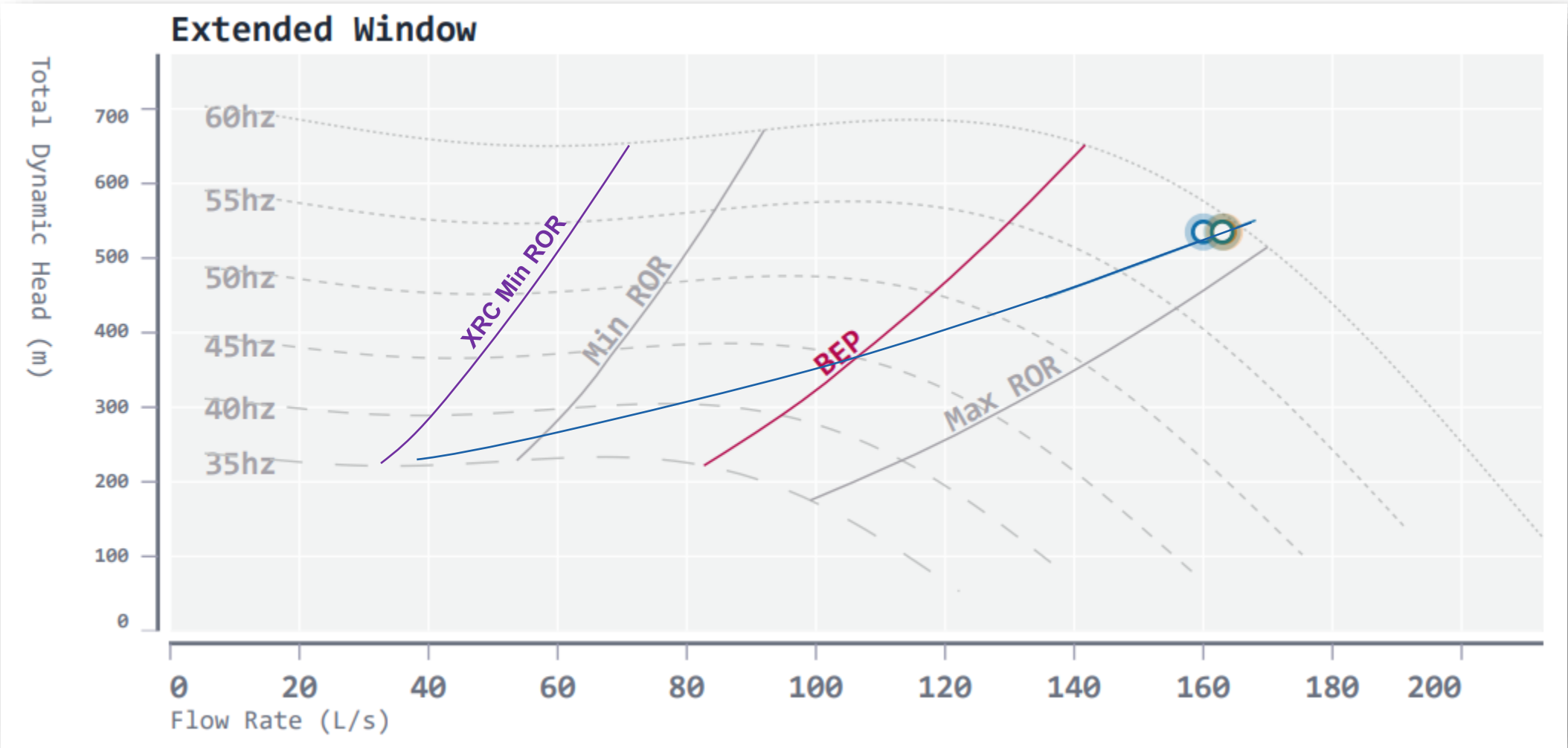


- Bolt on Discharge
- Bolt on Standard Intake
- Bolt on GeoIntake

- Same 9.50" OD
- Same Centralizer
- 158 bar rated housings



Energy Saving during low heat demand



- Reduce well testing cost
- Operate at maximal efficiency
- Pre-plan and pre-order surface system
- Faster project implementation
- Standardized Stock Holding
- Faster deliveries
- Better Pumps
- Standard well design
- Standard surface systems
- Reduce well engineering cost
- More Competitors
- Easier to exchange vendor
- Lower prices

Higher Returns





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