

Generation Facility Sizing



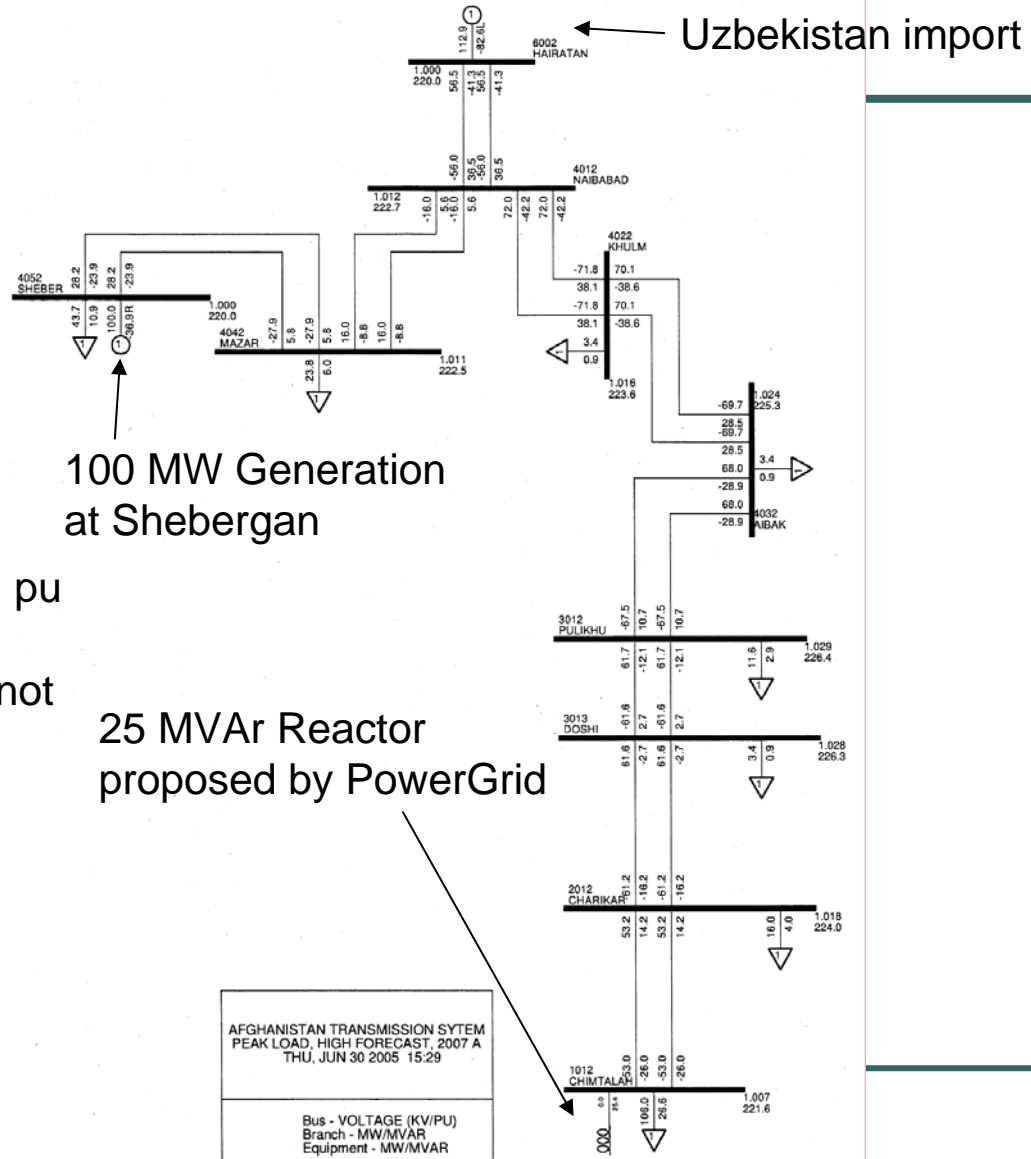
Michael A Breckon
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Generation Facility Sizing

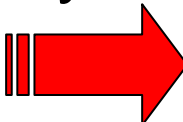
- ❑ Power System Requirements
- ❑ Sizing Options from Electrical Aspects
- ❑ Sizing Options from Logistical Aspects
- ❑ Rational for Selected Generator Size
- ❑ Sizing Agreement

Expected 2007 System, Peak Load

- Chimtalah load calculated as
Kabul = 216 MW
+ South & East = 40 MW
- Kabul Gen = 150 MW
- 25 MVAR bus reactor at Chimtalah controls voltage under peak load
- Equipment rated at $U_{max} = 1.1$ pu
- Continuous operation should not exceed 1.05 pu



Sizing Options from Electrical Aspects

- ❑ AFG Design Load ~400 MW
- ❑ System Stability must maintain $\pm 5\%$ of 50 Hz
- ❑  Largest block of failure 20 MW
- ❑ System could not handle >20 MW unit size

Sizing Options from Logistical Aspects

- ❑ Transport Options and Constraints
 - ❑ Road Transport
 - ❑ Rail Transport
 - ❑ Air Transport
- ❑ Maximum Weight
- ❑ Maximum Dimensions

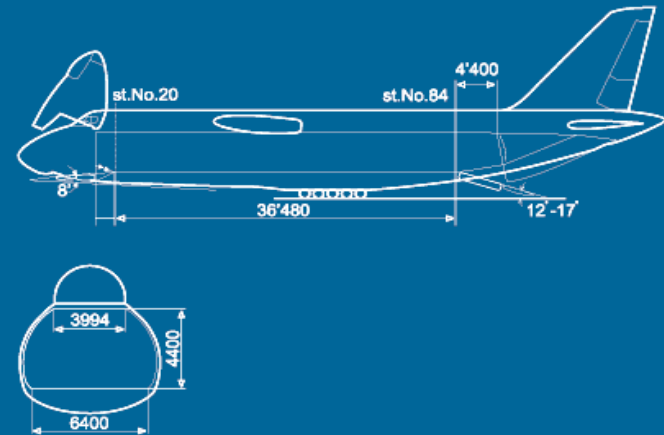
Heavy Transport Infrastructure Hairatan (Rail and Road)



Antonov AN124 Shipping Capacity

- ❑ Max Height: 4.4 m
- ❑ Max Weight: 120 tonnes
- ❑ Runway requirements: 4,600m


AN-124



Loading Dimensions for the AN-124



Rational for Selected Generator Size

- ❑ Network Stability
- ❑ Downtime on planned & unplanned Outages
- ❑ Phasing of Gas Supply
- ❑ Phasing of Energy Demand
- ❑  Conclusion:
 - ❑ 16 Units 6.6 MW = 105 MVA
 - ❑ 11 Units 9.5 MW = 105 MVA