

# Generation Facility Sizing



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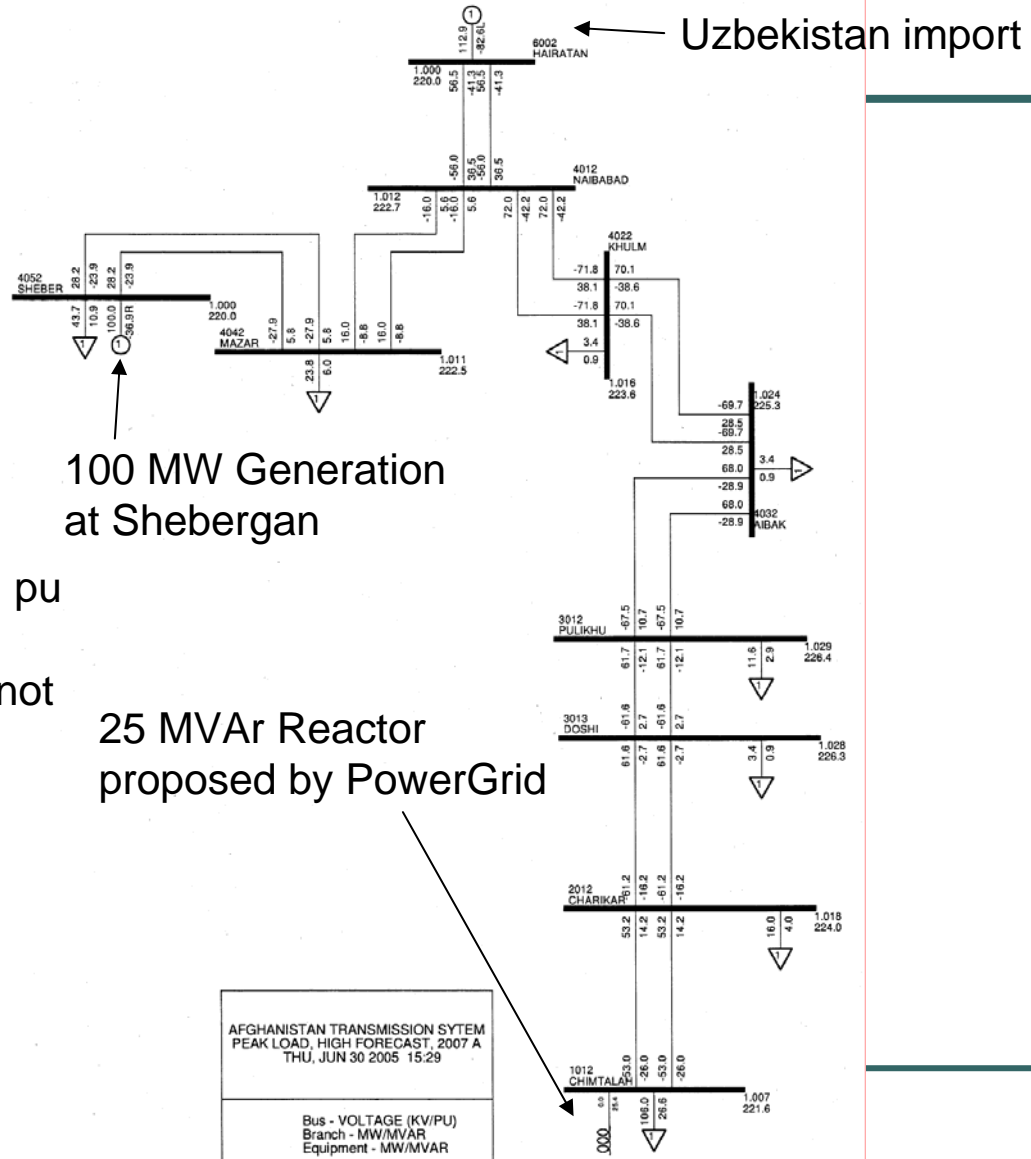
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- ❑ Power System Requirements
- ❑ Sizing Options from Electrical Aspects
- ❑ Sizing Options from Logistical Aspects
- ❑ Rational for Selected Generator Size
- ❑ Sizing Agreement



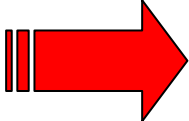
# Expected 2007 System, Peak Load

- 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

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- ❑ 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

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



# Heavy Transport Infrastructure Hairatan (Rail and Road)

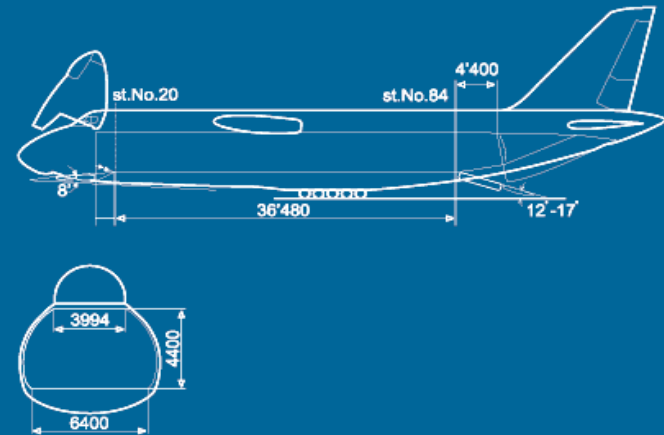
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# Antonov AN124 Shipping Capacity

- ❑ 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

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- ❑ 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