Feasibility Study for Gas Pipeline from Turkmenistan to Turkey
Shell EP International Ventures B.V. (SEPIV)

SEPIV entered an undertaking with the Turkman government to develop a project to transport up to 30 bcm/year of gas from Turkmenistan to Turkey and Europe by a new pipeline.

SEPIV wished to reduce costs of construction and operation by the use of innovative design and advanced materials.

Penspen provided the following services:

- Scoping study to define limiting options in materials, construction methods, design codes and system equipment to establish the maximum feasible MAOP, optional pipeline configuration and compression ratio for gas recompression.
- Pipeline route definition in 2 main corridors, one transiting Iran and the other crossing the Caspian Sea, Azerbaijan and Georgia.
- Hydraulic design optimisation using a design pressure of 123 barg and system flows of 15 and 30 bcm/year.
- Design of the pipeline system including linepipe coatings, corrosion protection, valves, pigging, seismicity, operating and maintenance facilities.
- Design of compressor stations including design parameters, space requirements, operation and maintenance facilities and costs.
- Design of telecommunications, SCADA and control.
- Pipeline construction cost estimate, review of indicative prices from international pipeline contractors, strategy and schedule.
- System cost estimates, total life costs and cost phasing for system construction period
- Risk assessment for a large diameter, ultra-high pressure onshore gas pipeline and comparison with risks associated with similar pipelines at conventional design pressures.

Profile:	2265 km, 56" diameter
Capacity:	30 bcm/year
Project Value:	US$4.3 Billion
Penspen Contract:	Feasibility Study
Penspen Manhours:	2000