

Network Innovation Competition Full Submission

Supplementary Answer Form

Tick if this answer is Confidential: ☐

Tick if this answer has been provided verbally: ☐

Project code:	NGGTGN01	Question Number	24
Question date	10 October 2013	Answer date	14 October 2013
Submission section question relates to			
Topic	Methodology		
Question	What data will you collect during the Demonstration? How will you collect it? And how will it be used to support the future business case for the rollout of VECTOR technology?		
Notes on question			
Answer	<p>We will carry out performance tests on the selected compressor unit, which will be the subject of the VECTOR demonstration, to baseline its performance, energy efficiency and emissions prior to retrofit of the technology.</p> <p>Data will be directly measured or computed from pressure, flow, temperature, speed, displacement, etc readings taken using sensors located at both the inlet and outlet of the compressor unit.</p> <p>The data collected will be used to quantify:</p> <ul style="list-style-type: none"> • The limits of the original performance envelope based on pressure head and flow characteristics (pressure, temperature and flow readings will be sampled continuously to assess this); • Energy consumption across the range of operation; • Carbon emissions associated with operation across the envelope; • NOx and CO emissions across the envelope of operation; 		

	<ul style="list-style-type: none"> • Gas leakage rates during operation; • Vibration and noise across the range of operation; <p>The same measurements will be taken again following retrofit of the VECTOR technology, to assess the new performance envelope and operating characteristics of the VECTOR compressor.</p> <p>Comparison of the baseline performance with VECTOR performance will allow the range extension and efficiency achieved by VECTOR to be quantified.</p> <p>During the performance testing the following information will also be recorded to assess safety and integrity issues:</p> <ul style="list-style-type: none"> • Fault conditions; • Failure modes; • Operational trips; • Borescope or other suitable inspection following the period of performance trials to assess fatigue, erosion and general condition of VECTOR components; <p>Also during the project the actual cost of retrofitting VECTOR technology will be obtained during the design and installation phases.</p> <p>This information obtained will be used to inform cost/benefit assessments for selection of VECTOR technology in future. The information will also be used by NGGT to specify the functionality, safety requirements, performance and guarantees for future VECTOR technology.</p>
Attachments	
Verbal Clarifications (Consultants)	