

# casestudy

product	customer	sector
 <p><b>Pnu Power</b> 5<sup>TM</sup> 5kW Compressed Air Battery</p>		National Grid US ( <a href="http://www.nationalgridus.com">www.nationalgridus.com</a> ) is the second largest utility in the USA. It delivers electricity to 3.3 million customers in Massachusetts, New Hampshire, New York and Rhode Island, and manages the electricity network on Long Island.

***Pnu Power Compressed Air Batteries perform reliably in temperatures of -40 to +50°C (-40 to +122°F), making them ideal for harsh environments.***



*The Pnu Power Compressed Air Battery at Barrington on Rhode Island is installed externally and is totally weatherproof.*

## challenge

- provide a reliable UPS at the National Grid US Barrington No. 4 substation, Rhode Island
- operate in parallel with an existing lead/acid battery installation, which is due for replacement
- deliver greater reliability, lower maintenance and OPEX costs than lead acid batteries, in a harsh climatic environment

## solution

- Pnu Power 5<sup>TM</sup> Compressed Air Battery, rated at 4kW, with 240V split phase 60Hz input and 125 Vdc output
- integrated automatic recharge compressor and cylinder pack, with 35 Bar (507.5 PSI) air store
- complete system installed externally, with small footprint

## benefits

- lower OPEX and whole life costs than conventional lead/acid batteries
- more consistent and reliable performance, with far lower maintenance
- no need for special housing in a harsh climate (locally -20 to +30°C)

	<b>Pnu Power</b> <sup>3</sup> 3kW Compressed Air Battery	<b>Pnu Power</b> <sup>5</sup> 5kW Compressed Air Battery	<b>Pnu Power</b> <sup>10</sup> 10kW Compressed Air Battery
Output	<b>3kW</b>	<b>5kW</b>	<b>10kW</b>
Height/Width/Depth	1700mm (66.9") x 800mm (31.5ins) x 600mm (23.6")	1700mm (66.9") x 800mm (31.5ins) x 600mm (23.6")	2200mm (86.6") x 800mm (31.5") x 800mm (31.5")
Weight	125kg (275lbs)	150kg (330lbs)	230kg (506lbs)
Supply Pressure	15 bar (217.5 psi)	28 bar (406 psi)	35 bar (507.5 psi)
Run Time from standard extendable cylinder pack	40 minutes	24 minutes	12 minutes

## standard specifications

POWER	
AC Voltage	Customer specified: 110-240 Vac 1 Phase, 380-480 Vac 3 Phase 50/60Hz
DC Voltage	Customer specified: 12-340 Vdc +/-ve grounding available as standard
AC + DC	Multiple outputs available
Voltage regulation	+/- 0.5%

OPERATIONAL SPECIFICATIONS	
Mode	Standby or UPS power

ENERGY SOURCE	
Source	High pressure cylinders or medium pressure plant main
Air quality	Standard industrial
Recharge type	Cylinder replacement or automatic compressor

ENVIRONMENTAL	
Operating temperature	-40 to +50°C (-40 to +122°F)
Storage temperature	-40 to +60°C (-40 to +140°F)
Humidity	>95% non-condensing
Heat dissipation	<100W in standby mode
Noise	<65dBA at 5m as standard across range
Enclosure	Standard industrial: internal & external options

INSTRUMENTATION	
Local	LCD display shows run time remaining and operational status
Remote	Ethernet (TCP-IP) or standard modem

STANDARDS	
Safety	CE Certified
Emissions	CE Certified
Immunity	CE Certified



Compressed Air Batteries  
the smarter backup choice

### Technical Information & Support

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