

# Compressed Air Systems Application

The Retrofit Program is designed for Commercial and Industrial (C&I) customers to help replace aging and inefficient equipment and systems with more energy efficient technologies. This application provides a template to collect project systems and equipment information and specifications. In addition, this form serves as a general overview of eligibility criteria for incentives as well as a guide to National Grid's Compressed Air System Optimization program administered under National Grid's Custom Program which is designed to help customers get the most value from the compressed air energy they use.

## APPLICATION AND INSTRUCTIONS

This application is designed for the replacement of existing operating equipment.

- This program covers applications created on or after January 1, 2021. Details of this program, including incentive levels, are subject to change without prior notice. The prescriptive application and all required documents must be provided as a complete package in one email to your NG Representative, otherwise it will be placed on hold and delay the application.

## ELIGIBILITY

- Must be an Upstate New York National Grid Commercial Electric Account holder and pay into the System Benefits Charge (SBC). IRS recognized farms and religious organizations may also be eligible if they pay into the SBC. Please verify with a copy of a National Grid electric utility bill.
- Product types eligible for prescriptive incentives are listed under sections A through D of this application. Measures not listed on this application may be eligible for incentives under our Custom C&I Retrofit program. Please contact your National Grid Representative or additional details.

## PRE-APPROVAL REQUIREMENTS

- Only completed applications will be considered and reviewed for incentive eligibility.
- All projects require a pre-inspection prior to National Grid issuing an incentive offer letter.
- BEFORE purchasing and installing the equipment, ensure the project is eligible for an incentive.
- National Grid account number, Federal Tax ID numbers and a W-9 form for the customer must be provided.
- Be sure to identify the customer or installation contractor receiving the incentive and where the check is to be sent.

## APPLICATION STEPS

- Proposed equipment manufacturer's technical specification sheets ("cut sheets") for each type of installed equipment must be provided with the application.
- Project must include labor and material cost.

## INSTALLATION AND PAYMENT STEPS

- Once a completed application is reviewed and meets the minimum energy savings requirements, an incentive is calculated and offer letter is provided to the customer and/or installation contractor for review and signature.
- The customer and/or installation contractor must:
  - Purchase and install equipment within 180 days upon receipt of the pre-approval letter.
  - Verify installation by providing a signed signature page from the customer report ("Certification of Installation")
  - Provide a copy of a paid invoice on company letterhead indicating type, size, make, model and quantity of equipment and include burdened project labor costs.
  - Return all required information to National Grid within 30 days of the installation.

## PROGRAM DETAILS

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**ALL FIELDS ON THIS PAGE ARE REQUIRED.**

## CUSTOMER/ACCOUNT HOLDER INFORMATION (Customer must submit a W-9 Form)

Customer Facility Name	Contact Person	Application Date																															
Phone	Fax	Customer Federal Tax ID Number																															
Install Site	Email Address	Square Feet (Covered by this application)																															
Street Address	City	State	Zip																														
Mailing Address (If different)	City	State	Zip																														
Company Type <input type="checkbox"/> Incorporated <input type="checkbox"/> Exempt <input type="checkbox"/> Not Incorporated	Classification Type <input type="checkbox"/> ≥2MW (Large) <input type="checkbox"/> <2MW (Mid-size) <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial *≥2MW Large Commercial use the <2MW Classification																																
Customer of Record: Billing Account Number (Required)	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>																																
Building Type (Select one) <table border="0" style="width:100%"> <tr> <td><input type="checkbox"/> Assembly</td> <td><input type="checkbox"/> Fast Food</td> <td><input type="checkbox"/> Hospital</td> <td><input type="checkbox"/> Multifamily High-rise</td> <td><input type="checkbox"/> Single Family Residence</td> </tr> <tr> <td><input type="checkbox"/> Auto Repair</td> <td><input type="checkbox"/> Food &amp; Beverage</td> <td><input type="checkbox"/> Hotel</td> <td><input type="checkbox"/> Multifamily Low-rise</td> <td><input type="checkbox"/> Small Office</td> </tr> <tr> <td><input type="checkbox"/> Big Box</td> <td><input type="checkbox"/> Full Service Restaurant</td> <td><input type="checkbox"/> Large Office</td> <td><input type="checkbox"/> Refrigerated Warehouse</td> <td><input type="checkbox"/> Small Retail</td> </tr> <tr> <td><input type="checkbox"/> Community College</td> <td><input type="checkbox"/> Grocery</td> <td><input type="checkbox"/> Large Retail</td> <td><input type="checkbox"/> Pharmaceutical</td> <td><input type="checkbox"/> University</td> </tr> <tr> <td><input type="checkbox"/> College Dormitory</td> <td><input type="checkbox"/> Heavy Industrial</td> <td><input type="checkbox"/> Light Industrial</td> <td><input type="checkbox"/> Primary Metals</td> <td><input type="checkbox"/> Warehouse</td> </tr> <tr> <td><input type="checkbox"/> Elementary School</td> <td><input type="checkbox"/> High School</td> <td><input type="checkbox"/> Motel</td> <td><input type="checkbox"/> Religious</td> <td><input type="checkbox"/> Other_____</td> </tr> </table>				<input type="checkbox"/> Assembly	<input type="checkbox"/> Fast Food	<input type="checkbox"/> Hospital	<input type="checkbox"/> Multifamily High-rise	<input type="checkbox"/> Single Family Residence	<input type="checkbox"/> Auto Repair	<input type="checkbox"/> Food & Beverage	<input type="checkbox"/> Hotel	<input type="checkbox"/> Multifamily Low-rise	<input type="checkbox"/> Small Office	<input type="checkbox"/> Big Box	<input type="checkbox"/> Full Service Restaurant	<input type="checkbox"/> Large Office	<input type="checkbox"/> Refrigerated Warehouse	<input type="checkbox"/> Small Retail	<input type="checkbox"/> Community College	<input type="checkbox"/> Grocery	<input type="checkbox"/> Large Retail	<input type="checkbox"/> Pharmaceutical	<input type="checkbox"/> University	<input type="checkbox"/> College Dormitory	<input type="checkbox"/> Heavy Industrial	<input type="checkbox"/> Light Industrial	<input type="checkbox"/> Primary Metals	<input type="checkbox"/> Warehouse	<input type="checkbox"/> Elementary School	<input type="checkbox"/> High School	<input type="checkbox"/> Motel	<input type="checkbox"/> Religious	<input type="checkbox"/> Other_____
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HVAC System Type (For custom lighting apps only – select one)

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> AC with Electric Heat | <input type="checkbox"/> Electric Heat Only                | <input type="checkbox"/> H2O Cooled Ammonia Screw Compressor |
| <input type="checkbox"/> AC with Gas Heat      | <input type="checkbox"/> Fan Coil with Chiller and Hot H2O | <input type="checkbox"/> Steam Heat Only                     |
| <input type="checkbox"/> CV ECON               | <input type="checkbox"/> Gas Heat Only                     | <input type="checkbox"/> VAV ECON                            |
| <input type="checkbox"/> CV No ECON            | <input type="checkbox"/> Heat Pump                         | <input type="checkbox"/> Other_____                          |

Is this an exterior/non-conditioned space installation?    Yes    No

## INCENTIVE PAYMENT

<input type="checkbox"/> Customer Address Above	<input type="checkbox"/> Installation Contractor / Equipment Vendor/ Project Expediter	<input type="checkbox"/> Other (Fill out below)	
Business Name	Contact Person		
Street Address	City	State	Zip
Phone	Email Address		
Company Type	Federal Tax ID Number (Required if receiving incentive)		

# Compressed Air Systems Application

## INSTALLATION CONTRACTOR/PROJECT EXPEDITER INFORMATION

Installation Company	Project Expediter	Contact Person		
Street Address	City	State	Zip	
Phone	Email Address			
Company Type	Federal Tax ID Number <i>(Required if receiving incentive)</i>			

## EQUIPMENT VENDOR INFORMATION

Equipment Vendor Company	Contact Person			
Street Address	City	State	Zip	
Phone	Email Address			
Company Type	Federal Tax ID Number <i>(Required if receiving incentive)</i>			

## ADDITIONAL APPLICATION INFORMATION

Expected Completion Date of Project	
<b>Total Cost Of Labor And Materials For Installed Compressed Air Equipment*</b> An actual invoice on company letterhead is required to be submitted to National Grid before final payment of incentive.	\$

## CUSTOMER ACCEPTANCE OF TERMS

<input type="checkbox"/> I certify that all statements made in this application are correct to the best of my knowledge and that I have read and agree to the terms and conditions of National Grid's Retrofit Program.				
By (Authorized Signature)	Printed Name	Title	Company	Date

# Compressed Air Systems Application

## A. Prescriptive High Efficiency Air Compressor Incentives

### I. Compressed Air Prescriptive Program Eligibility Requirements

1. Prescriptive incentives are only applicable to single compressor replacement operating at 145 psi or below.
2. Compressor being considered for replacement must be operational and run a minimum of 2,000 hours a year. Note when determining compliance, count only those hours that the end uses supplied by the compressor are operational, not the operating hours of the facility.
3. Only single oil flooded rotary screw compressor systems equipped with modulating controls, or dual control but operating in modulation mode are eligible for prescriptive incentives. Projects replacing the following types of compressors are not eligible under the prescriptive program: Rotary screw compressors with; Load/No Load, Variable Displacement or Variable Frequency Drive controls.
4. New compressor must be equipped with Load/No Load, Variable Frequency Drive or Variable Displacement capacity control.
5. Sizing of replacement compressor must be no larger than unit being replaced. Exception to this rule would be if the replacement unit is of VFD design in which case HP of new unit one size larger than HP of unit being replaced would be permissible.
6. Replacement of existing scroll, reciprocating and oil free compressors must follow the Energy Initiative custom approach.
7. Accessory devices that will be installed along with compressor not covered within this document will be handled as separate stand alone measures under custom approach while the compressor and receiver for the same project continue on the standard prescriptive incentive track. Examples of such accessories include low pressure drop filters, pressure flow controller, sequencer, etc.
8. Proposed compressor installations that satisfy all the requirements of the prescriptive approach, but also include significant energy conservation measures not included in prescriptive program such as modification of air distribution system or reduction of air consumption at the end uses, may apply for incentives under the custom approach.
9. All of the prescriptive measures contained in this document generally apply to single compressor installations equal or less than 75 HP compressor systems. Systems outside of this size range can be evaluated using custom approach.

### II. Prescriptive High Efficiency Air Compressor Incentive Compliance Details

1. Only compressors with nameplate horsepower equal to or greater than 15 Hp and less than or equal to 75 Hp are eligible for prescriptive incentives. For compressors with capacity rated in kW, rating shall be converted to HP for compliance check  $[= (kW) / (0.746kW/HP)]$ .
2. Primary storage is required on all projects per guidelines below:
  - a. For load/no load machines the minimum requirement is 4 gallons per CFM of compressor capacity.
  - b. For VFD or Variable Displacement machines, the minimum requirement is 2 gallons per CFM of compressor capacity
  - c. Where the limitations on the size range of available storage vessels (400 or 600 gallons etc) requires the purchase of more than the minimum required storage volume, an incentive will be provided for up to 1 gallon/CFM compressor capacity beyond the required minimum. Example: if calculated minimum is 460 gallons, standard storage available is 600 gallons, 75 CFM compressor rating, the incentive paid is for 535 gallons (460 + 75 = 535). This assumes there is no existing storage.
  - d. Storage from any existing tank mounted compressors remaining on site may not be counted toward minimum requirements.
  - e. Contact your Energy Solutions representative for assistance with above storage guidelines
3. Refer to important information on VFD drives in box below.
4. Supply cut-sheet on compressor that states capacity (CFM) at the operating pressure specific to this project.

#### Important Information on Variable Frequency Drives

VFDs can be sensitive to over voltages that occur when power factor correcting capacitor banks on utility power system are switched on. It is highly recommended, but not mandatory to qualify for an incentive, to have each VFD drive be equipped with a series reactor (inductor, choke) in its AC input connections. The minimum suggested requirement is a 3% impedance reactor, based on the horsepower of the VFD to be installed. In some instances, it may be necessary to install 5% reactors or additional filtering devices on the output side of the drive to meet acceptable current and voltage harmonic distortion requirements. Customer should always verify specific requirements with the manufacturer of the drive for optimum results.

If your power factor is less than 0.8 (80%), National Grid recommends you consider power factor correction concurrent with the installation of drives.

The use of VFDs which incorporate pulse width modulation (PWM) may produce over voltages which may cause premature failure of AC induction motors not rated for use with an inverter. We recommend when installing PWM drives, you consider utilizing inverter rated motors.

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## B. Refrigerated Dryer for Air Compressor

1. Dryer must serve a single air compressor with an input power rating of 75 HP or less.
2. Dryer sizing must be in line with the design capacity (CFM) of the single compressor it serves.
3. Dryer must be refrigerated, thermal mass, cycling design. VFD refrigerated dryers also qualify.
4. Refer to important information on VFD drives in box above.
5. Dryer must operate a minimum of 2000 hours annually.

## C. Zero-Loss Condensate Drains

A Zero-Loss condensate drain designed to remove liquid water without venting compressed air must be purchased and installed on a qualifying compressed air system. Zero-Loss condensate drains purchased as requirements for other compressed air measures are eligible for individual incentives.

## D. Engineered Nozzles

1. Projects may be eligible for installing engineered nozzles that work on the principle of entrainment of building air with compressed air and provide effective air nozzle action while reducing compressed air system flow.
2. Prescriptive incentives apply to 1/8" and 1/4" nozzles.
3. Flow rates if known can be entered under site specific option. Otherwise default flow rates will be used to calculate energy savings.

## Compressed Air Measure Incentive Information

### E. High Efficiency Air Compressor Incentive

**TABLE 1: PRESCRIPTIVE HIGH EFFICIENCY AIR COMPRESSOR INCENTIVES**

Horsepower	Incentive per HP Load/No Load	Incentive per HP Variable Speed	Incentive per HP Variable Displacement
≥15 to <25	\$160	\$250	N/A
≥25 to <50	\$100	\$150	N/A
≥50 to <75	\$90	\$100	\$100

**TABLE 2: STORAGE INCENTIVES**

Incentive per Gallon
\$2.75

**TABLE 3: PRESCRIPTIVE DRYER INCENTIVES**

CFM Range	Incentive per CFM Cycling and VSD dryers
Less than 100 CFM	\$4.00
100-199 CFM	\$3.20
200-299 CFM	\$2.40
300-399 CFM	\$2.40
400 and greater CFM	\$2.40

**TABLE 4: ZERO-LOSS CONDENSATE DRAIN INCENTIVES**

Incentive per drain (Limit 3 per facility)
\$120 Each

**TABLE 5: ENGINEERED AIR NOZZLES**

Air Nozzle Size	Incentive per Nozzle
1/8"	\$20/Ea
1/4"	\$20/Ea

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**TABLE 6: COMPRESSED AIR SYSTEM INCENTIVE CALCULATIONS**

Air Compressor Description (Manufacturer & Model)	Rated HP & CFM	Operating PSI	Control Type	Primary Storage (Gallons)	Annual Operating Hours	Incentive Dollar per HP	Requested Incentive Dollars
Example: XYZ Company VSD 50 HP model: # ABCDEF	50 HP 220 cfm	110	VSD	100	3,000	\$100.00	\$5,000.00
	HP cfm						

**TABLE 7: COMPRESSED STORAGE INCENTIVE CALCULATIONS**

Air Compressor CFM	Compressor Control Type:	(A) Required Storage in Gallons	(B) Existing Storage in Gallons	(C) =(A-B) Additional Storage Requirement in Gallons	Incentive per Gallon	Requested Incentive Dollars
					\$2.75	

**TABLE 8: REFRIGERATED DRYER INCENTIVE CALCULATIONS**

Manufacturer	Model Number	Cycling or VSD	Annual Operating Hours	Primary Storage	Rated CFM	Incentive \$ per CFM	Requested Incentive Dollars

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**TABLE 9: ZERO LOSS CONDENSATE DRAIN INCENTIVE CALCULATIONS**

Manufacturer	Annual Operating Hours	Operating PSI	Inlet/Outlet Connection (inch)	Quantity of Installed Drains	Incentive \$ Per Drain	Requested Incentive Dollars
					\$	\$

**TABLE 10: ENGINEERED NOZZLE CALCULATIONS**

Manufacturer	QTY	Type 1/8", 1/4"	Annual Operating Hours	Operating PSI	SCFM Existing	SCFM Proposed	Incentive \$ Per Nozzle	Requested Incentive Dollars
							\$	\$

<b>Total Requested Incentive</b>	\$
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<b>Total Cost of Labor and Materials for installed equipment:</b>	\$
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An actual invoice is required to be submitted to National Grid before final payment of incentive.

**Guide to Terms**

AC = Alternating Current

Compressed Air Unit of Measure: HP (Horsepower)

Compressor Storage: Air receiver tanks

\* Control Type: L/NL - Load/ No Load VFD - Variable Frequency Drives VD - Variable Displacement M/D – Modulating/Dual Control

# Compressed Air Systems Application

The following information is to be completed by the equipment vendor in coordination with the customer. Please describe the major components of your existing facility compressor and compressed air system.

Existing Compressor (Manufacturer & Model)	Rated HP & CFM	Operating PSI	Control Type*	Existing Primary Storage (Gallons)	Operating Hours/Wk	Compressor Loading (% Rated CFM)	Original Install Date	Status After New Install**
<b>Example:</b> XYZ Company Model: #ABCDEF	50 HP 220 cfm	110	Modulating, Load/No Load, Variable Displacement, or VFD	100	90	10hr@90% 30hr@30% 50hr@60%	1998	Removed

\* Modulating, Load/No Load, Variable Displacement, or VFD  
 \*\* Removed; Backup; Lead/Lag  
 \*\*\* When installing a new compressor and the existing compressor becomes lead or lag, the project will not qualify for an incentive as it will not be a single compressor system.

## COMPRESSED AIR SYSTEM OPERATIONAL ISSUES

How many shifts \_\_\_\_\_ and how does production vary? \_\_\_\_\_

What is the current system pressure at the furthest point from the compressor? \_\_\_\_\_psi

What is the minimum pressure required for proper equipment operation? \_\_\_\_\_psi

Any significant operational problems

- Inadequate pressure  Yes  No
- Moisture or air quality  Yes  No
- Production problems due to pressure fluctuations  Yes  No
- Other \_\_\_\_\_

Compressor Cooling Medium (air or water) \_\_\_\_\_

Number of Condensate Drains \_\_\_\_\_ Type \_\_\_\_\_ Timer Style Drain Setting \_\_\_\_\_

Dryer Type:  Refrigerant Non-Cycling  Refrigerant Cycling  Refrigerant VFD  None

Dryer Capacity (CFM) \_\_\_\_\_

Would you like additional compressed air efficiency services?

- Compressed Air Challenge technical training  Yes  No
- Technical assistance with a more complex compressed air project  Yes  No
- Leak assessment assistance  Yes  No

For Compressed Air Challenge technical and training information please visit: [www.compressedairchallenge.org](http://www.compressedairchallenge.org)