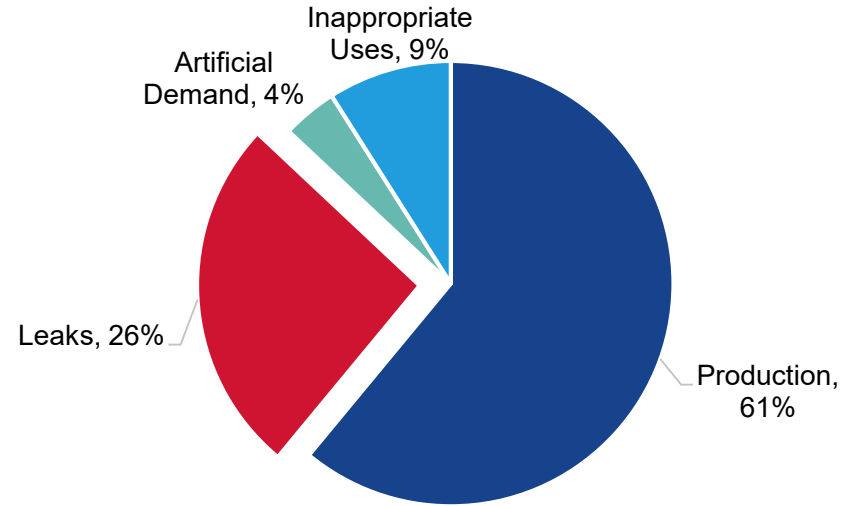




# SGNA COMPRESSED AIR CHALLENGE SUMMARY

## WHY COMPRESSED AIR?

- Compressed air is the **most costly** source of energy usage at many of our plants.
- A ½” leak can cost a site up to **\$115,000** per year if left unchecked.
- Over **48%** of our sites lack air leak tracking programs.
- **37%** of sites want a compressed air audit

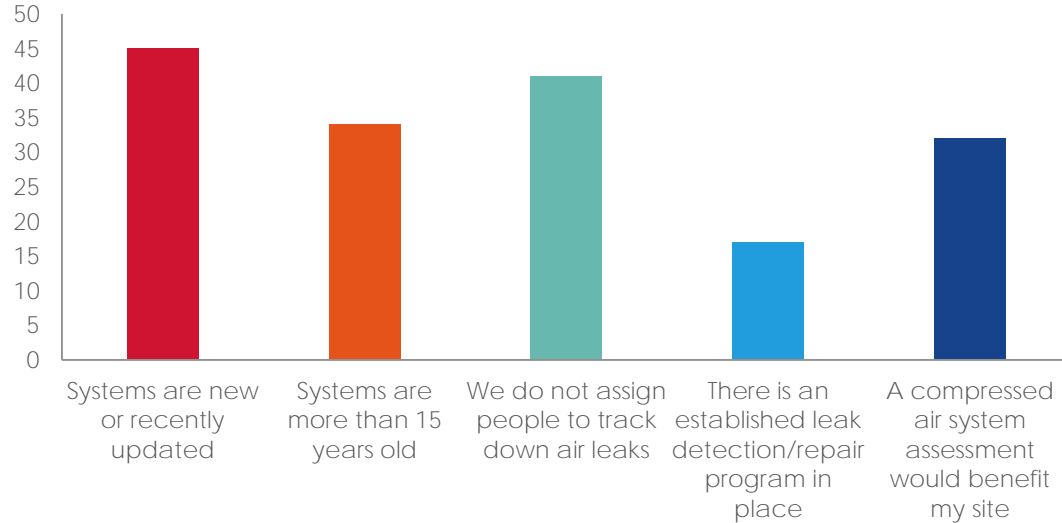


CertainTeed Roofing Facility  
Compressed Air Flow Distribution

## State of SGNA compressed air:

In a 2017 survey of 94 sites, 91% have compressed air systems

### Conditions of SGNA Compressed Air Systems



40% need to be replaced

48% lack air leak tracking programs

37% want a compressed air audit

The Sustainability Network recommends:

- Compressed air preferred vendor
- Leak detection and repair programs
- DOE INPLTs for compressed air
- Energy/compressed air audits



## THE SUSTAINABILITY NETWORK FORMED **COMPRESS IT**



Potential Annual Savings:

26 GWh  
of energy

\$2.5M  
of  
electricity  
costs

**WHEN:** October 29 – December 31

**WHO:** Open to all SGNA, with teams of up to 5

**WHAT:** A three-month, voluntary competition to see which site can identify and fix the most leaks, and make improvements to their compressed air system (both in operations and management)

## HOW DOES IT WORK?

### SITES SUBMIT TASKS IN AN ONLINE FORM FOR POINTS

Points	Task Description
5	Team name and photo
20	Compressed air audit completed in past 2 years
30	Form a compressed air team and/or leak detection and repair program
10	Monitor your compressed air system (i.e. sensors, meters)
20	Showcase use of at least (2) Sustainability Network compressed air resources
10 per leak	Find leaks (2 pts) <i>and</i> Fix leaks found (8 pts)
<b>BONUS</b>	
1st place – 100	Innovative employee engagement (i.e. Smack talk video, video of team, team t-shirts, presentation, etc.
2nd place – 60	
3rd place – 40	

# HOW DO SITES REPORT LEAKS FOUND AND FIXED? MULTIPLE LEAKS SUBMISSION FORM V2.0

SUBMISSION DATE MM/DD/2018



If you are submitting multiple leaks at once and are utilizing one of Methods 1 through 3, you may upload this template to the submission form. Feel free to use this form to record information on each of your compressed air leaks and fixes throughout the challenge. There are up to 10 leaks represented in the form, but more may be added.

[SUBMISSION FORM LINK](#)

## Method 1: 1) Orifice Method

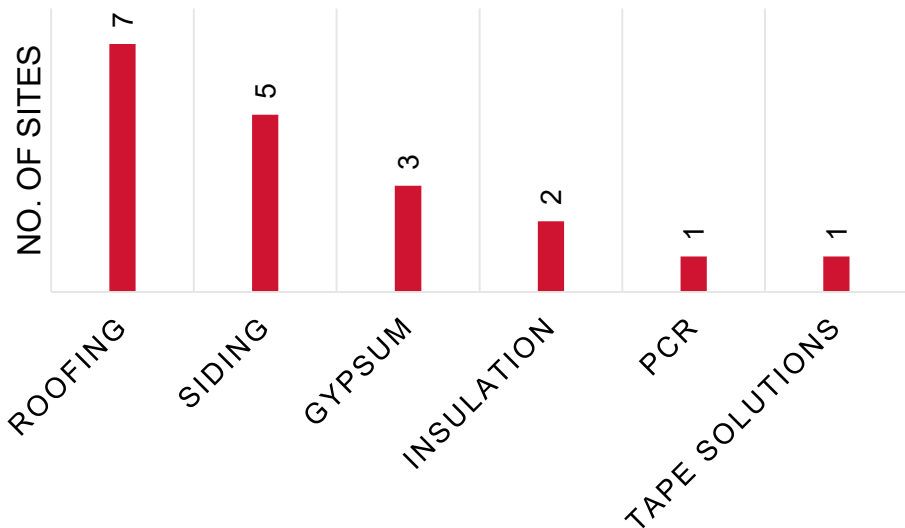
Use if the air is leaking out of an orifice (i.e. nozzle, hole in pipe, tube, etc.)

Leaks	Maintenance Tag #	Date Found	Date Fixed	Diameter of air leak (in)	Well-Rounded or Sharp Orifice?	Compressed air gauge pressure (psi)	Compressor flow (cfm)
1							
2							
3							
4							
5							



## SITE PARTICIPATION AS A RESULT OF THIS CHALLENGE...

### BUSINESS INVOLVEMENT 19 SITES TOTAL



3 sites scheduled compressed air audits

4 sites formed a compressed air team and leak tracking system

6 sites utilized SGSN compressed air resources

24 sites attended the Compressed Air Challenge webinar



# HOW WAS THIS COMMUNICATED? CHALLENGE GUIDELINES DOCUMENT



**COMPRESS IT.**  
COMPRESSED AIR CHALLENGE

OCTOBER 29 – DECEMBER 31

Join the Sustainability Network in **Compress It**, the Compressed Air Challenge launched for Saint-Gobain North America.

Compressed air is highly **energy intensive** and incredibly **expensive**, so this is a chance to make your systems more efficient and save money!

Find **AND** fix leaks at your site to **win prizes!**

**ENTER TO WIN:**

- Solar backpacks for the whole team
- Ultrasonic leak detector for the site to keep

and **BIWEEKLY MINI-CONTESTS**

- Smart Plugs
- Google Home
- Yeti

and more!

SAINT-GOBAIN



The SGNA Sustainability Network is launching our first Compressed Air Challenge, a voluntary competition to see who can **Identify** and **fix** the most compressed air leaks at their site. Compressed air systems are significant energy users and they're found in approximately 90% of SGNA plants. Another 48% of sites lack air leak tracking programs, so we created the challenge for sites to start fixing those leaks and provide quick wins for energy savings!

**Did you know?**  
A 1/2" leak can cost a site up to \$115,000 per year!

**When?**  
The Challenge will be held from **Monday, October 29 to Monday, December 31.**

**Who?**  
The Challenge is open to all Saint-Gobain employees in North America. Register in teams, with a maximum of **5 people per team**. There can be multiple teams per site, but your site is responsible for managing this.

**We're in! Now what do we do?**  
Once you have formed your team, you must submit the team name and members. Then begin completing the tasks in [Table A](#) and submit them by **Friday** of each week.

The Sustainability Network's [MySG page](#), has a suite of resources to help you find, measure, and analyze leaks in the Compressed Air Challenge section. All updates will be posted on MySG, including the weekly leader scoreboard.

**How do you determine who wins?**  
The ultimate Challenge winner will be the team with the highest energy savings from fixing the compressed air leaks. While there are a few methods to analyze compressed air leaks, we have limited the submission form to three methods:

- 1) **Air leak diameter and compressed air pressure:** Assuming the compressor runs to spec, the energy savings will be calculated using [Table B](#).
- 2) **Bag method:** Cover a suspected leak with a Ziploc bag and calculate the number of seconds it takes to fill the bag (calculated in MEASUR).
- 3) **Compressed Air Leakage Rate:** Use the Compressed Air Methodology p. 21

If you want to use a different method, you may do so if you provide proof/calculations for how you reached the energy savings in kWh. The Compressed Air Challenge section of MySG has resources with methods to calculate these values.

If you have any questions about the Challenge, you may email us at [SGHNASustainability@stgobain.com](mailto:SGHNASustainability@stgobain.com).





## HOW WE ENCOURAGED SITES TO PARTICIPATE WEEKLY POSTING OF LEADER SCOREBOARD

Ranking	Site Name	Business	Team Name	Points	Leaks Found	Percent Fixed
1st	Oxford, NC	CT Roofing	Weeki Leaks	1,413	146	82%
2nd	Jackson, MI	CT Siding	Leak Stoppers	1,076	100	96%
3rd	Cody, WY	CT Gypsum	Cody	576	152	22%
4th	Ottawa, ON	CT Insulation	Whistle Breaker	368	67	25%
5th	Avery, OH	CT Roofing	The Avery Avengers	363	28.5	100%
6th	Ennis, TX	CT Roofing	Full of Hot Air	348	24	54%
7th	Moundsville, WV	CT Gypsum	VolunTold	304	32	63%
8th	Piedmont, MO	CT Roofing	Max-Air-Mizers	268	57	30%
9th	Wilmington, CA	CT Roofing	Wilmington Compressed Air factioN (Wi-CAN)	194	83	0%
10th	Nashville, AR	CT Gypsum	Mystery Clan	189	48	

## HOW WE ENCOURAGED SITES TO PARTICIPATE BIWEEKLY CONTESTS AND PRIZES

2<sup>nd</sup> Week

**Register Team  
Name and Photo**



SMART PLUGS

4<sup>th</sup> and 6<sup>th</sup> Week

**Find and Fix 10  
Leaks**



SAINT-GOBAIN YETI  
TUMBLERS

ANKER POWER  
BANKS

8<sup>th</sup> Week

**Innovative Employee  
Engagement**



SMART LIGHTS

10<sup>th</sup> Week

**Best Team Name**



SMART PLUGS

# INTERNAL WEBSITE FOR WEEKLY UPDATES AND RESOURCES

## COMPRESSED AIR CHALLENGE



Join the Sustainability Network in Compress It, the SGNA Compressed Air Challenge, held from October 29 to December 31. All updates, scoreboards, and links will be posted here.

Submit your tasks here [🔗](#).

**Note:** You will need to create a Google account to submit files. You can create a temporary one with your Saint-Gobain email for the purposes of this challenge.

Access all of the resources here [🔗](#).

### MINI-CONTESTS AND SUPERLATIVES

#### **BEST TEAM NAME (due 12/31)**

Vote for the best team name **HERE** [🔗](#)!

Winners will get **Wifi-enable smart plugs** for the whole team!



#### **FIX MORE LEAKS (due 12/7)**








Reach at least **10** leaks fixed to be entered into the drawing for portable **power banks**. For those teams who already have 10 fixed leaks, fix 20. Remember for the contest I will accept a maintenance request!

# INTERNAL WEBSITE FOR WEEKLY UPDATES AND RESOURCES

## BEST PRACTICES AND RESOURCES

SUSTAINABILITY RESOURCES

Search:   

- [-] Sustainability ▾
  - [-] Best Practices ▾
    - [+] Biodiversity ▾
      - [-] Compressed Air ▾
        - [+] AIRMaster+ Tool ▾
        - [+] Compressed Air and Gas Institute (CAGI) ▾
        - [+] Compressed Air Challenge 2018 ▾
        - [+] Condensate Drains ▾
        - [+] DOE Compressed Air In-Plant Training at Roxboro Gypsum ▾
        - [+] DOE Energy Treasure Hunt Compressed Air Calculators ▾
        - [+] SG Compressed Air Methodology ▾
        -  Air Savings Opportunities.doc ▾
        -  Compressed Air Basics.pptx ▾
        -  Compressed Air Guide.pdf ▾
        -  Energy Tips-Minimize Compressed Air Leaks.pdf ▾
        -  SGNA Compressed Air Status 2017.pptx ▾
        -  SGNA Sustainable Operations Checklist.pdf ▾
        -  UMPChapter22-compressed-air-evaluation.pdf ▾

## CHALLENGE 1<sup>ST</sup> PLACE PRIZE



**Weeki Leaks**  
CT Roofing – Oxford, NC

**146 leaks found**  
**82% of leaks fixed**

**Weeki Leaks** was a fierce contender, closely trailing behind Leak Stoppers for all but one week, with dramatic improvements in the last couple weeks bringing them to the top. Their site worked hard, took the Challenge seriously, and were rewarded



**1st PLACE PRIZE**

**Solar-Charging  
Backpacks**

## CHALLENGE 2<sup>ND</sup> PLACE PRIZE



Also a fierce contender, **Leak Stoppers** led the pack almost every week, finding and fixing many leaks both fast and early. How? Leak Stoppers held an internal competition for employees to find leaks with the Slogan "Help us find our leaks and we will help you fix yours." The winners were given a gift certificate to an auto repair shop.

**Leak Stoppers**  
CT Siding – Jackson, MI

**100 leaks found**  
**96% of leaks fixed**



**2nd PLACE PRIZE**

**Amazon Echo Dots**

## BONUS POINTS FOR INNOVATIVE EMPLOYEE ENGAGEMENT

### 1<sup>ST</sup> PLACE PRIZE



**Full of Hot Air**  
CT Roofing – Ennis, TX

**19 leaks found**  
**5% of leaks fixed**

**Full of Hot Air** created a participant video of the site finding air leaks. Almost all departments got involved! Please enjoy this suspenseful, epic film depicting air leaks at the CertainTeed Ennis plant!



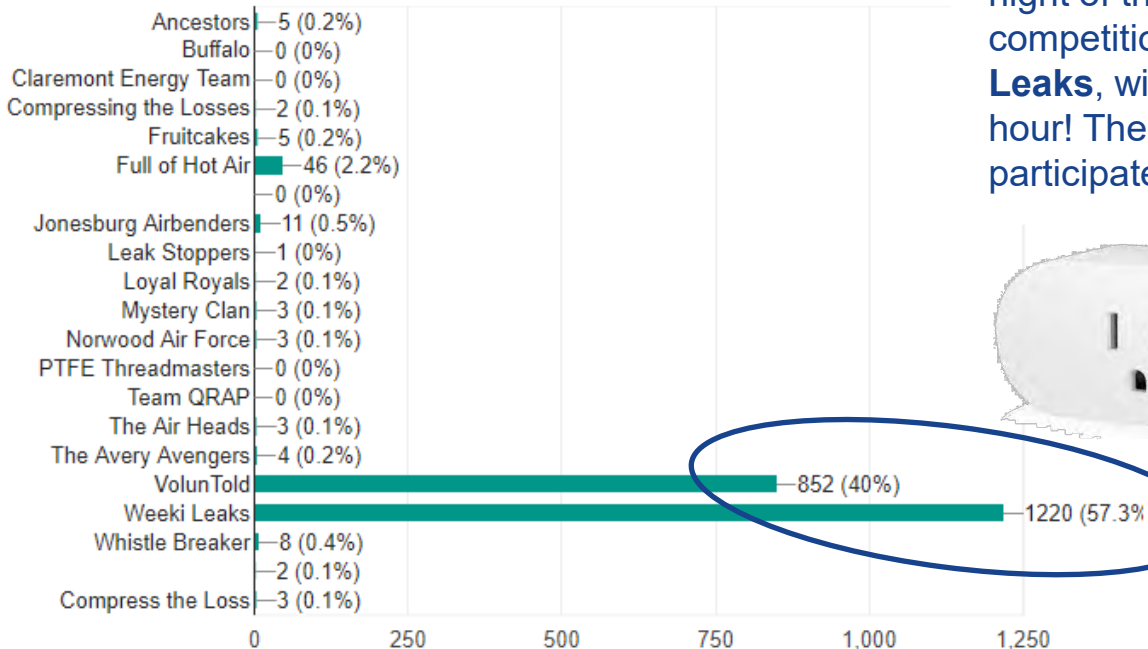
**1<sup>ST</sup> PLACE PRIZE**

**Smart Lights**

# TEAM NAME COMPETITION

Choose the BEST team name(s) below

2,129 responses



The Team Name competition was administered on a Google Form, and the night of the deadline prompted a fierce competition between **VolunTold** and **Weeki Leaks**, with the winner changing every hour! The sites got all employees to participate.



**1st PLACE PRIZE**

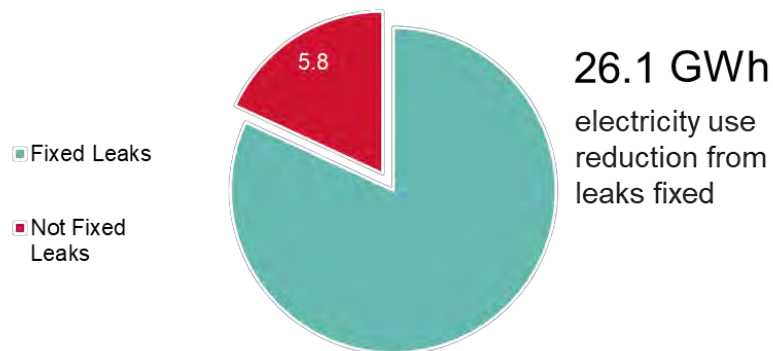
**Smart Plugs**



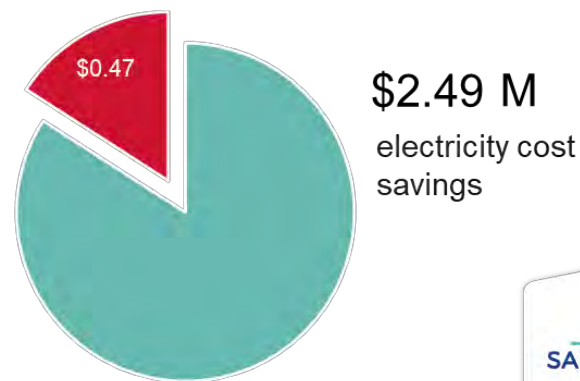
## POSITIVE IMPACTS

- Promotes the development of a continuous compressed air management and operations team
- Highlights best practices at different sites and provides the opportunity for sharing
- Sites found 824 leaks of varying sizes, and repaired 47% of them
- The collective fixed leaks resulted in potential energy savings of 26 GWh of electricity, or \$2.5 million (assuming leaks found persisted for a year and are fixed). This is 5% of the 2018 energy spend for all 19 sites.

**ELECTRICITY CONSUMPTION**



**ELECTRICITY COSTS**



## CHALLENGE GOALS SUCCEEDED



Provide a fun, low-cost way for sites to tackle the compressed air issue



Empower sites to create their own solutions while still utilizing the resources provided by the Sustainability Network



Help each site to develop or enhance a continuous and sustainable compressed air operations and management system in order to keep down compressed air costs



Spur quick energy savings that could make an impact on the next year's environmental reporting goals

Thank You



  
SAINT-GOBAIN