



MANUFACTURING &  
INDUSTRIAL

# ON-SITE ENERGY GENERATION CHECKLIST



PLAN. ACT.  
OPTIMIZE.

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# COMBINED HEAT & POWER

A Department of Energy Study discovered there's an untapped potential for CHP estimated at 75,900 MW for commercial and multifamily homes, and 65,400 MW for industry. While larger CHP systems are typically customized, small to midsize projects can be administered with a more plug and play model. Historically, these combined heat and power customized projects were reserved for large industrial facilities that had a reserved budget for such infrastructure. Now, small to midsize facilities can also take advantage of implementing comprehensive CHP infrastructure without the setback of costs.

## CHP CHECKLIST

### SYSTEM OPERATIONAL SCHEDULES

- ☐ Is existing site equipment is working efficiently?
- ☐ Have all energy efficiency saving measures been implemented?
- ☐ Have future plans that would increase site production levels and increase energy demand and the site base load, been considered?
- ☐ Is a thermal store is required?
- ☐ Can adjacent sites use the electrical and heat energy when demand is low on the main site?
- ☐ How critical the security of the supply?

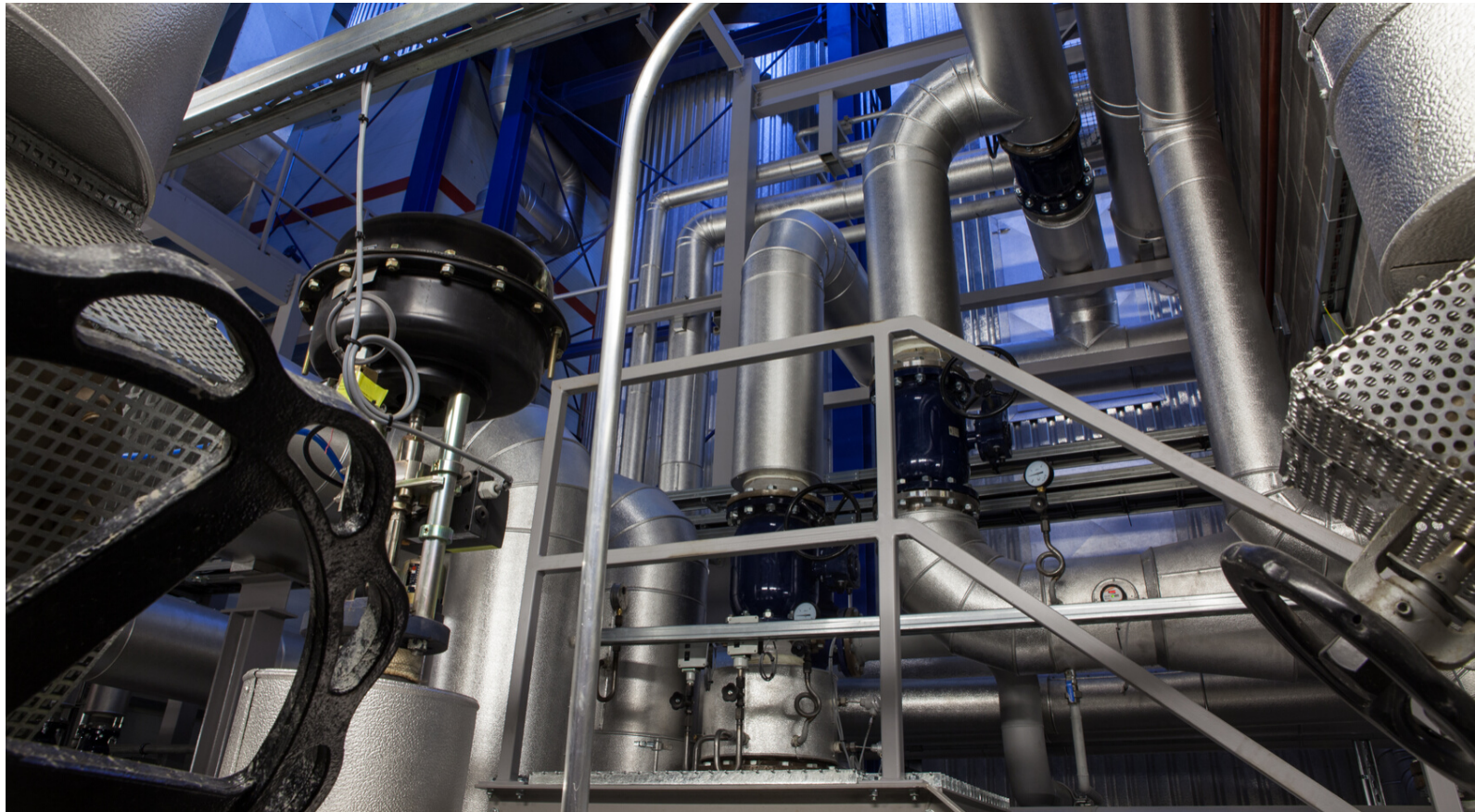
### CHP UNIT, HEAT RECOVERY, & MECHANICAL SYSTEMS

- ☐ Is there sufficient space on-site to position the CHP unit in an internal or external location?
- ☐ Are there any sitting or weight restrictions to be considered?
- ☐ Is there sufficient space for ancillary equipment, pipework and access for maintenance?
- ☐ Are there any additional site infrastructure works required to accommodate the CHP?



# UTILITY INTERCONNECTIONS CHECKLIST:

- ☐ Are electrical, heating, and cooling connections close to the CHP?
- ☐ Does the system have a reliable and secure primary fuel supply?
- ☐ Is there an internet connection for remote monitoring and fault diagnostics?
- ☐ What interface will be used for the site control system?



# ON-SITE SOLAR ENERGY GENERATION

With the drastic reduction in cost and growing need for more reliable energy sources, Solar PV is paving the way for maximized energy optimization. C&I buildings are poised for some of the most significant benefits of incorporating Solar PV (Photovoltaic) Energy Generation into a facility's energy portfolio including:

- Improved carbon footprint
- Reduced costs on energy
- Increase control of energy load shifting
- Improved energy stability
- Increased facility value

## ON-SITE SOLAR CHECKLIST

- ☐ What electrical, structural code, and permitting concerns exist?
- ☐ What is the maximum size allowable for the solar equipment based on the existing site, utility infrastructure, and other site or interconnection factors?
- ☐ Evaluation and recommendation for contingency plans in case equipment requires replacement due to project defects, fire, or extreme weather-related incident?
- ☐ Gather recommendations for switchgear and transformer upgrades
- ☐ Code compliance: Roof and ground-mounted area shading, structural, and land analysis
- ☐ Solar design review for the project that meets local codes, utility requirements, tax incentives, grants, and other financial incentives
- ☐ Seismic load compliance evaluation
- ☐ Assess roof access locations, staging areas, locked fences/gates, potential inverter locations, point of interconnection, condition of the roof, and electrical distribution panels
- ☐ Complete an overview of the existing project information, such as the build diagrams, structural considerations, and potential improvements
- ☐ Address the financial and technical aspects of adding energy storage to an existing PV system for peak shaving, back-up, and grid services





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A1 Energy is a leader in energy consulting services committed to develop and deliver creative solutions to optimize energy efficiency, reliability, and sustainability for our clients. We combine our deep industry knowledge and financial expertise to dramatically lower energy costs and meet sustainability measures for our clients. We support government agencies, industrial, and commercial clients in achieving energy efficiency through reduced demand, strategic procurement, and alternative energy sources.

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