



## PLANT OPERATIONS

# Key Points to Developing A New Ice Plant

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A common question I often hear as an industry supplier is, "What should I consider when building a new packaged ice factory?" Facilities throughout the world can vary greatly, but some concerns are universal. I've highlighted some important steps in the planning process to help get you started.

1. Determine a market. Before outlining your business plan, make sure there is a potential demand for ice. Who are your target customers? Convenience stores, gas stations, concrete companies, produce, seafood or other industrial customers? Before committing to building a factory, talk to prospective customers. Ask them if they have a need, find out how much ice they are using, and if they are happy with the service they are getting from their current source.

2. Determine how much ice you need to produce. Ice production is the ticket to company profits. Remember in this industry, production is based around the sales from Memorial Day thru Labor Day. Without enough available ice production, a new company can stunt their growth and miss out on valuable opportunities. But as ice making capacities increase, the processing and packaging system's productivity must also increase. Finding a balance in this overall investment is key to driving company profits. This is the first big challenge to developing a sustainable manufacturing platform that will realize the best ROI. Smaller scale facilities will typically be more labor intensive because the bulk of their equipment investment must be allocated to ice production. As the scale of an ice plant increases, so should the investment in more packaging and palletizing automation. This step goes hand-in-hand with determining your market. Any sales data that prospective customers will share with you is extremely valuable. Knowing what a customer's sales are like in July can help you project their sales for the year. A sampling of data can be extrapolated to put together projections for the future business.

3. The next essential item is to determine a designed growth plan for the facility. Developing this growth plan in advance helps to build a better overall investment. Throughout most of North America, there are three sizes of packaged ice manufacturing platforms that have been found to be the most profitable.

- The first is a small platform that typically starts with 10-20 tons of daily ice production with a designed expandability of around 40-50 tons.

- The second platform starts with about 120 tons of production and will grow to around 200 tons.
- The third platform will begin with about 200 tons of production and will have a planned growth of around 450-500 tons of packaged ice production per day.

The investment balance between ice production and operational productivity is typically driven by the scale, and designed growth, of a manufacturing platform. Each size of manufacturing platform is very unique to the other, so determining this scale before beginning engineering is crucial. By this step, it is highly recommended that you are working with an experienced package ice system development company with strong engineering capabilities that can help guide your investment dollars. If you are new to the industry, the number of equipment options can be overwhelming. It is important that you speak with an expert that has a deep understanding of the industry and the resources to properly support your efforts.

4. Once you determine production requirements, it is necessary to determine what building options are available. Ensuring that you have room for the initial build, as well as future expansions, will save construction dollars, valuable time, and headaches when it is time to grow. It is important to not only make sure that future equipment will fit in the building, but to have a plan for getting the equipment into that position.

You'll need to ensure the building space you choose also provides access for cleaning and maintenance. This includes spaces around the equipment, and above it. Reading through the IPIA PIQCS Manual will tell you what is expected of your facility. Ice makers require regular access to the top of the machines. Other building considerations should include:

- Will the cooling towers, or evaporative condensers, need to go on the roof or a particular space outside of the building?
- For industrial ice making equipment, three phase power is required as are certain voltages.
- Be sure that there is an adequate safe and reliable water supply to accommodate your future potential max water consumption. This could be in the form of a public water supply or a well. Both options have their pros and cons.

- You will need to have freezer storage. 3-5 days of production is a common starting point. Freezer space is a tradeoff, as it is expensive to operate, but it will allow for taking advantage of additional sales opportunities and occasional operational down time.

A qualified and honest industry supplier can help guide you through this step. It is common to have an engineering site survey done prior to purchasing or leasing a building. If access to the building is not possible (or it is a new build), detailed building drawings should be reviewed.

5. Along with all of this, it is important to keep in mind that delivering ice is the most expensive part of the process. It is in your best interest to select a location close to your key delivery areas. Software options are available to maximize route efficiency, but the less miles between production and the end users, the better. Easy access for trucks and tractor trailers are also a factor to consider, as they will most likely be bringing in your bags, ice merchandisers, and other supplies as well as helping move product.

6. Evaluate all the costs before breaking ground. The building and equipment are the headline costs, but there are usually several extra expenses associated with a new facility. Electricians, plumbers, mechanical contractors, room refrigeration units, and delivery vehicles all add up. One of the largest costs that is often overlooked is ice merchandisers. It is not uncommon to spend the same amount for merchandisers as you would on production and processing equipment in the first year of business.

Creating a new packaged ice plant is a major undertaking. The IPIA, EPIA and regional trade shows are a great place to make connections and learn about available products. Many association members would be happy to walk you through their factory and show you some of the things they like about their plant and things they wish they had done differently. When developing a new packaged ice manufacturing plant, proper planning on the front end can avoid headaches and help you see a faster return on your investment. Having a clear understanding of scale and growth at the beginning will ensure the best investments are made up front to support the future growth and success of a new packaged ice plant.