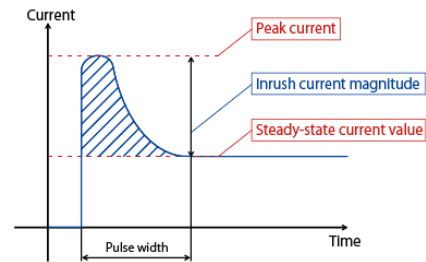


IN-RUSH CURRENT

It May Be Costing You a Fortune!

When you turn on electrical equipment like lift motors, snow fans, compressors, pumps, and conventional lighting (metal halide, high pressure sodium, or LEDs), the initial amount of power (voltage and current) can range from 5 times to 20 times the operating requirements. This is called “in-rush” current and it can drive your entire electric bill through the roof. That’s because surges associated with in-rush current can substantially increase “on-demand” electric charges.



Electricity costs have several components:

- ◆ The charge for delivery in kilowatt hours (“line charges”)
- ◆ The charge for kilowatt hours consumed
- ◆ The charge for the amount of **peak demand** (“on demand charges”)
- ◆ Charges for power quality (“power factor charges”)

Peak demand charges represent an overall rate for the maximum amount of electricity used by your entire facility. The charge is based upon the fact that your utility must have that amount of electricity available to you if, and when you need it. This rate applies to the whole bill.

Unfortunately, not enough attention is paid to demand charges because we think we can save money by simply reducing usage. While it may be true that decreasing hourly electrical consumption can lower your electricity overheads, this is not always the case if no effort is made to drop peak demand usage.

The Good News! Save 5% to 20%!

Believe it or not, you can shave 5% to a whopping 20% off your electricity overheads by simply implementing “best practices” in starting and stopping equipment. Many ski areas already understand that lifts and snow-making equipment should be activated *sequentially* rather than simultaneously. Thus, lift operators and/or ski patrol should be careful not to overlap in-rush current. When a lift motor is activated, sufficient time should be given for the in-rush current to subside *before activating* another piece of electrical equipment. Snow fans, compressors, and pumps should be monitored to avoid overlaps on starting cycles whenever and wherever possible.

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Night Lighting... A Major Culprit!

Night lighting is also a *very important consideration*. Conventional metal halide or sodium lights can have very high in-rush currents that can exceed 15 times operating power. Consider that only 50 metal halide lamps rated at 1,000W can consume 862,500 watts when you flick the switch. That's because ballast overhead can exceed 150W per fixture; $1,150W \times 50 \text{ fixtures} \times 15 \text{ in-rush current} = 862,500W$.

Unfortunately, many ski operations flip the switch as the sun comes down around 4:00pm in the northern hemisphere. Lifts are likely to still be operating along with snow-making. The result is a momentary pop in demand that spins the meter and costs money on the entire electric bill... 24 hours x 7 days for the whole season! So, with just the right scheduling, it may be possible to change demand charges and lower monthly electrical bills... even if you do not significantly lower the total amount of kilowatt hours consumed.



Brings CASH to Your Bottom Line, FAST!

There is only one industrial grade of ballast and bulb that presents a negligible in-rush current increase of less than 0.5. This is the technology used in Snow-Bright™ snow venue lighting. With more than three seasons in the field, Snow-Bright™ can actually lower demand charges from a multi-year baseline to save **on entire electric overheads**. Here's how it works:

- ◆ Replacing 50 metal halide 1,000W with Snow-Bright™ 300W fixtures:
 - Total existing electrical overheads with metal halide including 150W ballast overhead = $50 \text{ lamps} \times 1,150W = 57,500W$ operating electricity. New Snow-Bright 300W fixtures with 15W ballast overheads = $50 \text{ lamps} \times 315W = 15,750W$ new operating electricity. Operating electricity savings = $57,500W - 15,750W = \mathbf{41,750W \text{ saved...}72.60\%}$.
 - In-rush current on existing metal halides at $15X = 862,500W$. In-rush current on new Snow-Bright™ fixtures at $1.5X = 23,625$. **Savings 365%**.

The drop in peak demand of 365% is enough to lower the demand charge rate for the **entire bill**. For most areas with night lighting, the result can **immediately add cash** to the bottom line. Payback (return on investment) shrinks from multiple seasons to less than one season. Thereafter, the cash flow is **net positive!** Imagine saving 5% to 20% on your electricity bill!

Keep in mind that LEDs have in-rush currents that can be a higher percentage than conventional metal halide or high pressure sodium. That is why many new LED installations *have not yielded significant electricity savings*. Find out more about how you can retrofit using Snow-Bright™ technology... the only lighting specifically designed for snow venues like yours!

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