What is the future for DR - Demand Response?
It has no future.

The Next Generation of DR is limited needs for DR.

Introduction and background: For Power companies, Demand Response - paying customers to shed load as summer demand needs require - has been used for many years.

The information presented here is not about downplaying or questioning the use of demand response.

It is about asking if capabilities to provide permanent electricity reductions, Demand Management (DM), would be considered of value for managers of electricity company providers?

This opportunity is the subject of this article.

Note 1: About Us Owl Energy Technologies

We are a distributor of a family of "Intelligent Motor Controllers" with Variable Voltage Drive (VVD) capabilities for three phase alternating current fixed speed motors. Our Intelligent Motor Controllers reduce electricity for commercial & industrial power company customers. They are and have been in use successfully worldwide for Ten (10) years.	Owl Energy Technologies

Note 2: Graphic of our motor controllers

Our Motor Controllers - Three Phase Distributed Energy Resources - **DERs**

The Motor Controllers being introduced here are Three Phase Distributed Energy Resources (DERs) in the Energy Efficiency category and in front of the meter, part of the area substation grid.

The motor controllers have Variable Voltage Drive (VVD) capabilities.

Our motor controllers are and have been used successfully worldwide for Ten (10) years.

The DER's include unexpected contradictions: Power company will love these intelligent motor controllers DERs as they will reduce summer demand. Customers will love these DERs as they will see reduced electricity charges.

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Part A: Summer Demand needs and Demand Response (DR) Basics

Summer Demand - increased needs for electricity during hot summer months - represents significant and continued challenges for electricity power companies.

Using data from previous summers and analytical techniques, potential summer demand 'hot spots' are identified including estimates of expected KW loads.

With agreements by customers to 'shed load' at several types of notice, Demand Response, the power company manages summer demand.

Customers are paid for their commitments to Demand Response programs and are also paid by the size of the load shedding that they provide.

Living in NY Con Ed territory and being an active NY Con Ed "Participating Contractor", we have seen several annual DR reports.

We interact with several U.S. electricity power companies and we have seen the expenditures that may be needed for their summer demand needs to be met with Demand Response.

The financial costs of Demand response can be tens of millions of dollars within a state and over one billion dollars total nationwide.

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For all its use nationwide, Demand Response (DR) provides band-aids - temporary load reductions - as needed and called for by the power company.

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Part B: Summer Demand needs and Demand Response (DR) Sources of Demand

We recognize that summer demand presents a variety of challenges.

To be able to plan and consider solutions, we need to ask:
What are the major contributors to summer demand?

For our purposes here, the major contributors to summer demand are Air Conditioning (A/C) and Refrigeration systems used by Business customers of electricity providers. Also known as Three phase alternating current users.

Please see Note 3 below: Business or commercial & industrial customers compared to residential power company customers.

The Future of Demand Management and Demand Response (DR) - A New Scenario

Even knowing the contribution to summer demand of power company business customers' A/C and refrigeration systems, is there now or has there been a reason to inventory business customers' A/C and refrigeration systems, the sources of summer demand?

There has not.

There has not been an energy efficient device capable of reducing electricity for these applications.

The Future of Demand Management and Demand Response (DR): A New Scenario - "Intelligent Motor Controllers"

Introducing a family of "Intelligent Motor Controllers" designed to work with business customers' air conditioning and refrigeration systems.

These motor controllers are sized and installed at the customer air conditioning and or refrigeration application site. Once installed, the electricity reductions of 25% are permanent.

Where demand response is temporary, the motor controllers provide Summer Demand management - the electricity reductions are continuous.

Please see Note 4 below: Additional applications available with these Motor controllers

Please see Note 2 above: Graphic of motor controllers

The Future of Demand Management and Demand Response (DR):- The New Scenario - "Intelligent Motor Controllers" - How applied and where

As discussed above, up to now there have not be reasons for power companies to have and manage inventories of their business customers' air conditioning and or refrigeration applications.

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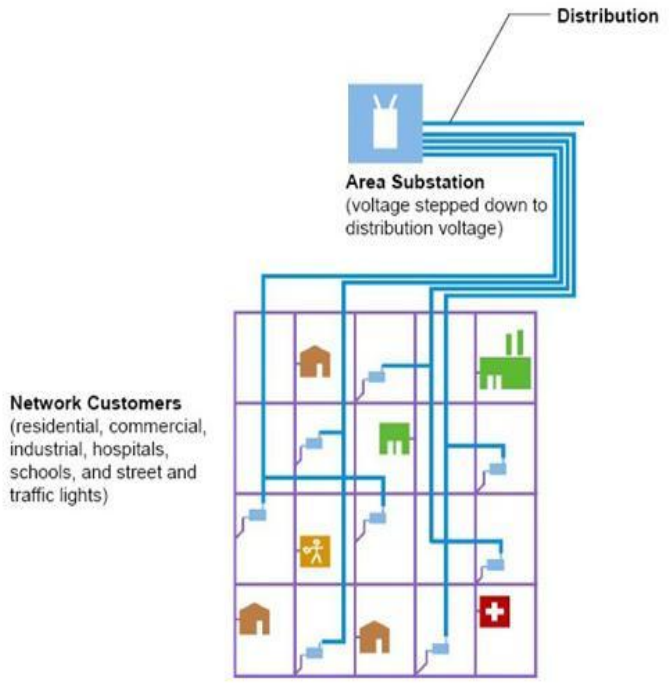
For every U.S. electricity provider, and every one of their customers, whether Business (or Commercial and Industrial) or Residential, their electrical service source can be traced back to an "Area Substation".

As the motor controllers being introduced here work at the customer application site, and each customers electrical application is sourced back to an area substation, it is at the area substation that there are now compelling reasons for power companies to inventory three phase air conditioning and refrigeration systems.

As discussed above, using data from previous summers and analytical techniques, potential summer demand **'hot spots'** are identified including estimates of expected KW loads.



These 'hot spots' are a power company area substations.

An area substation if it has and or is expected to experience excessive summer load, summer demand, it will be the focus for our new demand management scenarios and inventories.

Area substations with histories of excessive summer demand and at or near capacity would also be identified and be high priority for inventories.

Having an inventory and being able to measure expected summer demand, as motor controllers are installed and the electricity reductions of 25% measured, needed demand reductions can be monitored and show progress to reduced electricity goals. When a motor controller is installed, the electricity reductions are continuous and permanent. Whenever daily summer demand management needs exist, the electricity reductions will be there.

As the motor controllers are installed, electricity reductions will reduce summer demand levels and reduce demand response needs and costs.

Motor controller installations can also be determined and planned that will increase capacity for customer installations at the area substation.

Benefits for management

- Managed Inventories and management of summer demand needs.
- Actual electricity reductions to assess reduced Demand Response needs and costs.
- Management now available at area substation to project increased area substation customer capacity.

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Smart Grid capabilities provided

Our motor controllers provide smart grid capabilities: reduced electricity usage, reduced start-up spikes and soft-start capabilities. Reduced KW reduces KVAR, and enables Power Factor corrections for the power company grid.

Reduced electricity usage provides extended motor life

There are communications capabilities that would enable motor controller operations to be monitored at facilities and locations determined by the local power company.

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AREA SUBSTATION Example Three Phase, business applications

Detail Column descriptions below example

Area substation Example: Three Phase applications								
A	B	C	D	E	F	G	H	I
Application Type	Quantity	Motor size	Type of Compressor Scroll, reciprocating, etc.	Without reduced kW	Quantity Times kW	With reduced kW 25%	Quantity times reduced kW	KW savings F minus H
Air Conditioning								
	125	208/220 Volts, 30 HP avg.		5.3	662.5	4	500	162
	75	460 Volts 40 HP Avg.		21	1575	17	1275	300
							Total kW savings 462	
Three Phase refrigeration results will be similar to the three phase Air Conditioning A/C above								

Depending on the size, number of customers and application type at an area substation,
Three phase demand reductions may also help manage single phase summer demand needs.

Additional application types supported by our motor controllers will also see electricity reductions.
Agriculture refrigeration systems, oil field pump jacks and factory and industrial applications.

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AREA SUBSTATION Example Three Phase, business applications

Detail Column descriptions

Column	Description
A	For this example represents the type of application: here A/C air conditioning systems
B	Represents the quantity, counts by motor sizes of this application type
C	Represents the motor size details; these are used to size the motor controllers
D	Represents the Type of Compressor: scroll, reciprocating, etc, also used to size motor controllers
E	Represents estimates of expected kW from installed unit without motor controller
F	Quantity(B) times (E) kW expected without our motor controllers
G	Electricity reductions with motor controller
H	Quantity(B) times (G) reduced kW with our motor controllers
I	Column F, without motor controller kW minus Column H, motor controller reduced kW
Note for A	In addition to Three phase air conditioning and refrigeration systems, inventories could include industrial and factory applications as conveyors, if appropriate to your state, Oil Field Pump jacks, presses, escalators pulverizors, plastic injection molding machines and more.

We can help:

If you are a company that provides electricity and would like to discuss ways to manage Summer Demand needs: please contact us. We can provide assistance so that your people understand the part played by your area substations customer base. There may be questions regarding the inventories suggested here and how they will provide the tools to manage summer demand.

We can discuss the roles played by electricity usage Summer Demand challenges with three phase Air Conditioning (A/C) systems and or three phase refrigeration systems and how our Motor Controllers will provide Summer Demand reductions and reduced DR, Demand Response, costs.

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If you are a company with known concerns about the electricity usage costs with three phase Air Conditioning (A/C) systems and or three phase refrigeration systems, please contact us: we will discuss your needs and application installations and suggest actions to get you started reducing those electricity costs.

Please see note 2 above: Graphic of the motor controllers

Please see note 1 above: About Owl Energy Technologies

Note 3: Business or commercial & industrial customers compared to residential power company customers.

In the U.S. Business, also known as Commercial & Industrial power companies customers receive Three phase electrical service with rates different from residential customers including usage and demand charges.

Residential customers receive single phase electrical service with rates that typically include only usage charges. These services are part of the homes, townhouses and retail units for homeowners and renters.

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Note 4: Additional applications available with our Motor controllers include a variety of industrial and factory applications as well as escalators and single motor elevators.

While our focus here are air conditioning and refrigeration systems, a variety of factory and industrial applications use significant KW and may contribute to summer demand issues and load concerns all year.

These applications include conveyors, pulverizors, metal machining and manufacturing presses, wood working, plastic injection molding, and more, will also see reduced electricity usage.

For states with agriculture applications, there are typically refrigeration needs that can see electricity reduced. For states with Oil Field Pump Jacks usage, electricity reductions are available.

For more information, contact us:

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