Webinar

July 27, 2017

NEXTENERGY ask us what's next

WELLS FARGO

DTE Energy Know Your Own Power

DENSO Crafting the Core

NextChallenge: Smart Cities 2017

agenda

- Hear from the Team
  - Gina Schrader, NextEnergy
  - Rob Wunsche, DENSO
  - Richard Mueller, DTE Energy
- Overview
- Application Process
- Q&A

NEXT CHALLENGE

smart cities 2017

HEAR FROM THE TEAM

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team member

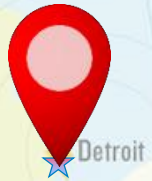
Gina Schrader

Director, Business Model Innovation

NEXTENERGY
ask us what's next

NextEnergy

who we are



NEXTENERGY is an innovation center accelerating advanced energy and mobility technologies that *transform* how we use energy to improve the way we live and move.

NextEnergy - What we do

help small companies grow

- Since 2002, NextEnergy has worked with over **400 companies**, major universities, federal agencies, and philanthropic organizations to attract over **$1.5 billion** in advanced energy and mobility technology investments.
- Between 2011-2016, 95 unique small company clients reported:

Secured nearly $500 million in new funding and business

2,100 jobs created or retained

600% increase in jobs

705 patents, copyrights, trademarks filed

NextEnergy - What we do

accelerate innovative solutions via public-private partnerships

NextEnergy Center

unique assets

High Speed Data
100GB internet & PLC backbone

Commercial Offices
Private & co-working space

Convening Space
Auditorium, atrium, breakouts, parking

Labs
Eight high bay wet/dry labs

Mobility Testing
EV & DSRC connected infrastructure

Connected Home
Smart, distributed & DC "living lab"

Microgrid
Utility, renewables & on/off-grid

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team member

Rob Wunsche
Director, Technical Planning
North American Research & Engineering Center

DENSO

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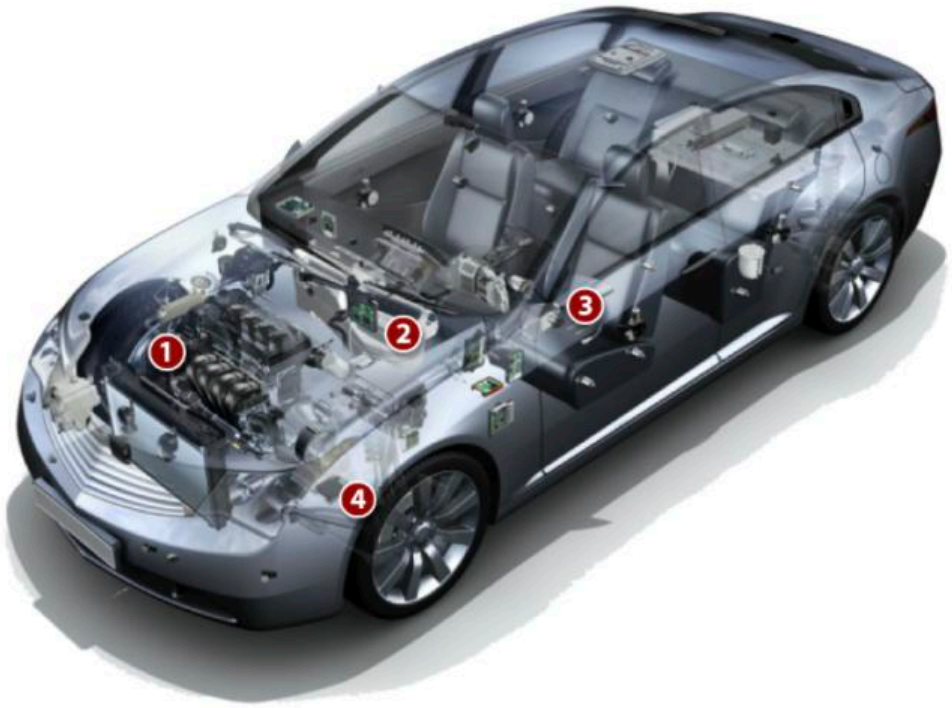
Who is DENSO?

Global Supplier of Advanced Automotive Technology, Systems and Components with $40.4 Billion in Sales

(As of March 31, 2017)



1. ***Powertrain Control System***
   Engine management system, Gasoline direct injection, Hybrid components, Starter, Alternator, etc.

2. ***Thermal Systems***
   Heating Ventilation Air Conditioning (HVAC), Compressor, Heat exchangers, Battery thermal management, etc.

3. ***Information & Communication Systems***
   Instrument Cluster, Head-up Display, Human Machine Interface technologies, Horn, Keyless entry, Wireless phone charger, etc.

4. ***Driving Control & Safety Systems***
   Passive safety technologies, Airbag sensing system, Active safety technologies, Traction control system, Antilock braking system, etc.

Protecting Lives, Preserving the Planet, and Preparing a Bright Future for Generations to Come

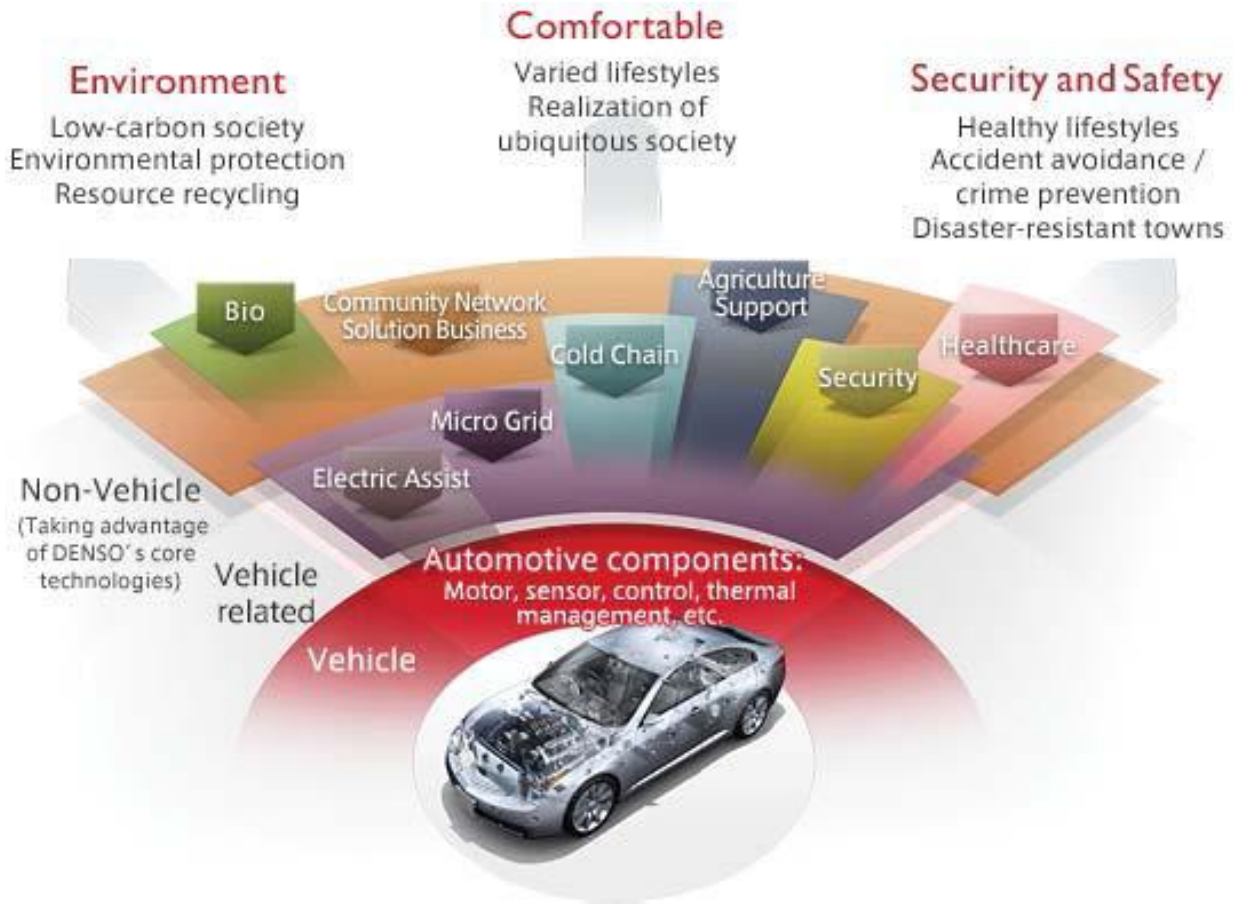
Established: Dec. 16th, 1949

Subsidiaries: 190 (Japan 62, North America 28, Europe 35, Asia 59, South America/others 6)

Future Mobility and Beyond

As a mega supplier, DENSO has the technologies and global capabilities to address some of society's greatest challenges.

We plan to take our core automotive technologies and apply them to different fields and industries to help create the future Smart City.



MDrive
Electric Car Share Program

What was MDrive?

- **An EV-focused Car Sharing program based around a centralized location (dormatory) and set pool of users (students)**
- **A research study focused on identifying the benefits and challenges of EV car sharing**

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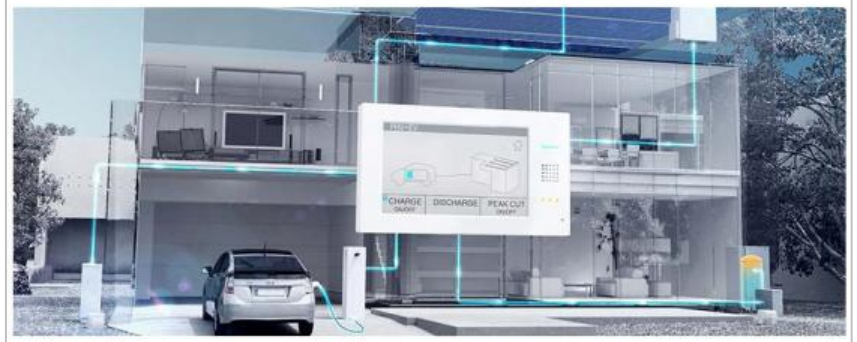
Other DENSO Expertise

Consumer Products

DENSO is helping to make smart homes a reality with product and technology offerings from charging stations to hot water supply systems.



Home Appliances

Development and manufacture of products such as CO_2 refrigerant heat-pump water heaters, central air conditioners and Home Energy Management Systems (HEMS).

Industrial Products

Our industrial products and technologies support factories, shops and offices in a wide variety of industries. You will find DENSO innovation in robots, QR and bar-code readers and mobile air conditioning units.

Industrial Products

Development and manufacture of factory automation products (industrial robots, programmable logic controllers,) automatic identification products (bar-code readers, QR code readers and IC card-related products.)

DENSO's New Business Fields

Our research and development efforts continue to drive us into new areas of business, solving problems and benefiting society beyond the automotive industry.

- Micro-grid Products (HEMS, Storage Batteries, V2H)
- Human-assist Robots
- Laser-Sensor Security Systems
- Healthcare (Biosensors and Surgical-assist Robots)
- Biotechnology (Micro-Algae fuel)
- Agriculture Support Systems
- Cold Chain Management Systems

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team member

Richard Mueller
Manager of Engineering Technology

DTE Energy®
Know Your Own Power

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DTE Energy is a force for growth and prosperity in the communities it serves

- Regulated and non-regulated energy services for over 150 years
- 2.2 million electric customers and 1.3 million gas customers in Michigan
- More than 10,000 employees nationwide
- Headquarters in downtown Detroit
- Transformational force in the city of Detroit and larger region

About

- Richard Mueller
- Manager of Engineering Technology
- BSEE and BSCE from University of Michigan
- Over 15 years with DTE
- U.S. Drive Utility Lead
- DOE ARRA Smart Grid Investment

Goal: deliver an affordable, resilient, reliable, flexible, secure and sustainable supply of energy

- Energy efficiency
- Demand response
- Vehicle electrification
- Intelligent integration of distributed resources
- Energy storage
- Renewal of the City of Detroit

OVERVIEW

NextChallenge: Smart Cities 2017

overview

NextChallenge addresses challenges facing urban areas by accelerating the development of hardware and software smart city solutions that are connected, interactive & data driven `

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benefits

Entrepreneurs

- **Build opportunities** with industry and urban leaders
- **Demonstrate technology** in a real-world setting
- **Shorten commercialization timeline** with proof-of-concept metrics

Industry

- **Fast-track strategic partnership opportunities** by integrating tech solutions into products/infrastructure in a real-world setting
- **Accelerate market adoption**
- Lead efforts to **advance smart city technology solutions & concepts**

Cities & Citizens

- Improve **access and user experience**
- Improve **safety and security**
- **Reduce impact on the environment and public health** caused by emissions, land use, and/or congestion

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awards

Up to $100K in awards

Demonstration Award	Grant Award
Up to $80K to support demonstration deployment	Up to $20K in grant awards

*One awardee must be a small business owner (<500 FTEs)

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2016 winners

Demonstration Award

Callida energy

"The prize is allowing us to install our software in a commercial building site, do a baseline, make changes to how the building is operated, and develop a case study for how our solution delivered specific savings for the building. Before this challenge, we had a presence in New York and Houston. We saw opportunity in Detroit, but we weren't known in the market. This competition put us on the map in the region."

Raphael Carty, CallidaEnergy.com

Grant Award

RIDEHOP

"We used the award to develop a working prototype for the first phase of Smart Bus Stops, which we then demonstrated live at the Ford Go Detroit Challenge. We have now integrated the technology into our core platform, a factor that was crucial in helping us land a major contract in Las Vegas this year."

Travis Knepper, RideHop.com

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success criteria

- Demonstration must be executed in 2018 at NextEnergy Center, or applicable site
- Solutions with measurable metrics, address data analytics & information sharing, and open API
- Software and/or hardware solutions resulting in 1+ of the following:
  - Improved user access & experience
  - Improved safety & security
  - Reduced impact on the environment & public health caused by emissions, land use, and/or congestion

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review criteria

Solutions weighed against the following:

- Validity of Innovation
- Qualifications of Applicant(s)
- Competitive advantage
- Scalability

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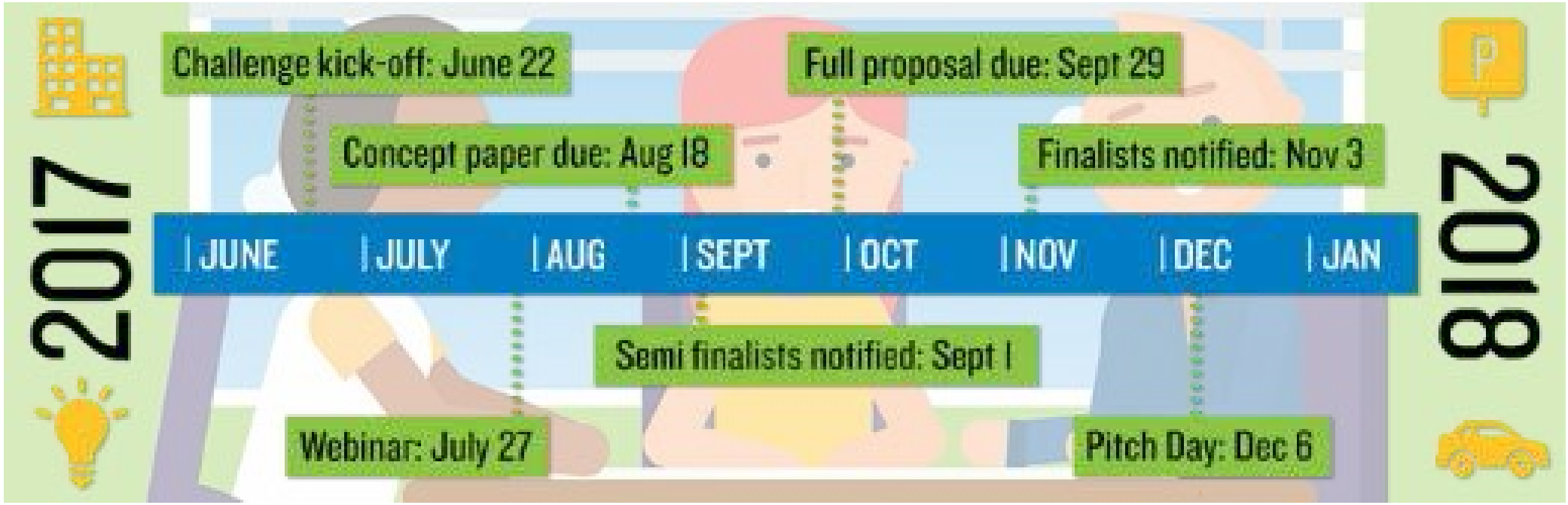
timeline

Concept paper due August 18, 2017 at 11:59 p.m. EDT



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pitch day event

NEXT CHALLENGE

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APPLICATION TIPS

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submitting your proposal

- Visit nextchallenge.org
- Click on “Apply Today”
- Create log-in

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proposal tips

- Concept for a demonstration to be executed in 2018 at NextEnergy Center, or applicable site
- Must be in English
- Measurable metrics
- Address data analytics and information sharing
- Open application programming interface (API) capabilities
- “See Official Rules” on the Eligibility tab at nextchallenge.org

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AUDIENCE Q&A

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contact

Gina Schrader
Director, Business Model Innovation
313-833-0100 xt. 170
ginas@nextenergy.org

NextEnergy
461 Burroughs
Detroit, MI 48202
nextchallenge.org