



# Progressive Energy, Environment & Sustainability

Congress 9 – September 2011

## Innovation through experience

The Bosch Group is a leading global supplier of technology and services and operates in the areas of automotive, industrial technology, consumer goods and building technology.

- ➔ Global turnover of roughly 63.4 billion USD (47.3 billion Euros) in 2010
- ➔ Around 283,500 associates
- ➔ Innovation and highest quality standards since 1886
- ➔ Each year Bosch spends more than 4.7 billion USD (3.5 billion euros) for R&D and applies for around 3,800 patents worldwide



14 patents per working day and 8% investment of revenue in R&D!

# Bosch's commitment to climate targets

- By 2020 Bosch aims to cut CO2 emissions by 20% from 2007 in all plants
- Bosch has reduced its electricity usage by 20% since 2007
- Bosch has reduced its Gas usage by 35% since 2007
- Bosch uses Environmental Management Systems at all its 292 manufacturing sites around the world
- Bosch operates approx. 1220 facilities w/ total building area of 536 Mio. ft<sup>2</sup>
- Challenges in Facility Management
  - Security issues - Assessing facility vulnerability accurately
  - Energy issues - Planning for energy costs and price increases
  - Environmental issues - cost and increasing costs
  - General building operations – Preparing and staying on budget



Our experience in facility management is used for product innovations

## Global warming

- By 25 September 2009, humans had generated as much CO<sub>2</sub> as the earth is able to absorb within an entire year.
- In order to maintain our lifestyle in the long term, we would need 1.4 planets.



# What is Bosch doing to protect the environment?

## Environmental management to ISO 14001 at all manufacturing sites

- Heat recovery
- Reduction of water consumption / waste
- Power-saving measures
- Use of solvents phased out
- Similar requirements made of suppliers

More than **40 percent** of our research and development expenditure goes into products that protect the environment and conserve resources. In 2008 alone, this amounted to **more than 2.0 billion USD.**



# Bosch Thermotechnology within Bosch Group

## Consumer Goods and Building Technology



Power  
Tools

Thermotechnology

Households  
Appliances

Security  
Systems



# Facts & Figures – Bosch Thermotechnology

- **Headquarter:** Londonderry, New Hampshire
- **Employees:** 147
- **Products:** Bosch Thermotechnology specializes in designing and manufacturing appliances for heating, cooling and hot water applications for residential, commercial and industrial buildings, theoretical and hands-on trainings
- **Locations in US:** Londonderry, NH; Fort Lauderdale, FL; Irvine, CA



## Meeting customer demands

Residential

Commercial

Industrial

Standard Products and Systems (SPS)  
Trading business

Large Specified Systems (LSS)  
Project business



## Product portfolio



# Service: Bosch Engineering Solutions

**Products:** renewable energy, high efficiency, conventional, energy generation

**Products**

Design

Installation

Start-up

Flexible and customized heating, cooling and hot water solutions for any application

- Oil and gas boilers, electrical and gas tankless water heaters, Geo-thermal heat pumps, Solar thermal, Photovoltaic, Home appliances, Security systems and Accessories
- Tailored combinations of technology for your exact needs and demands
- Implementation of newest processes and technologies for extended reliability and minimization of product foot print
- Highly competent and flexible team in constant communication with our clients



# Service: Bosch Engineering Solutions

**Design:** application design support,  
application design review, design innovations

Products

Design

Installation

Start-up

Designing of heating, cooling and hot water applications in cooperation with clients and project stakeholders

- Engineering support to review application design concepts
- Engineering support to create tailored system solutions to accomplish energy saving goal of clients
- Providing energy saving and payback estimations for investment decisions
- Access to design/sizing tools
- Bosch qualified project management helps to keep projects on schedule



# Service: Bosch Engineering Solutions

## Supervision of Installation:

Products

Design

**Installation**

Start-up

Installation engineering, supply and installation of HVAC systems for heating, cooling and hot water in accordance with specifications

- Site visit evaluation/survey before installation to discover potential for investment saving
- Detailed guidance on how to install Bosch equipment
- Meeting with on-site personnel to discuss present service and maintenance procedure
- Our *installation supervision* is guaranteed to provide a consistent and successful *installation*



# Service: Bosch Engineering Solutions

## Start-up – Commissioning:

Products

Design

Installation

**Start-up**

Qualified inspection of final installation and validation of correct install according project specifications

- Supervision and detailed guidance to start-up equipment
- Supervision for commissioning
- Qualified training for on-site maintenance personnel
- Advantage: increase significantly performance of commissioning process
- Document service for on-site equipment
  
- Advantage of Bosch Engineering Services:
  - **Turn-key solution to archive client's project goals**



## Case Studies North America

### Maricopa – County

- Models installed (7/2011)
  - 1,210 Solar collectors
  - 880 pieces on one building
- Project payback/savings
  - Calculated 7 years
  - 59% energy savings per year



### 64 Room Hotel – Franconia, NH

- Models installed (4/2009)
  - Bosch C920 ESC tankless
  - Four units cascaded
- Project payback
  - 4 years



### Riverside Correctional Facility

- Models installed (12/2008)
  - 45 Solar thermal collectors
  - 2 Boilers GE515 + DHW tanks
- Project payback/savings
  - Calculated 8 years
  - 20% energy savings per year



### 48 Unit Condominium Complex - Van Nuys, CA

- Models installed (8/2010)
  - Bosch C920 ESC tankless
  - Four units cascaded
- Project payback
  - 3.5 years



### Office Building – San Francisco

- Models installed (5/2011)
  - Boiler GE615 + burner
- Project payback/savings
  - Calculated 5 years
  - \$5,000 / month on gas bill



### NetZeroHome – Bathurst, CAN

- Models installed (4/2010)
  - Bosch PV, Solar thermal
  - Geo-thermal HP, Appliances
- Project payback
  - Calculated 11 years



# Management Statement



Ervin L. Cash  
President and CEO

“We at Bosch Thermotechnology Corp. are dedicated to provide maximum **customer value** in all that we are doing by utilizing our technical **competence**, the **commitment** of our employees and our passion for **innovation**.”

Sustainability through experience and qualified services





Thank you very much for your attention!

Take care.

