

# Successful heating with wood

Building a case for an inclusive approach to project delivery

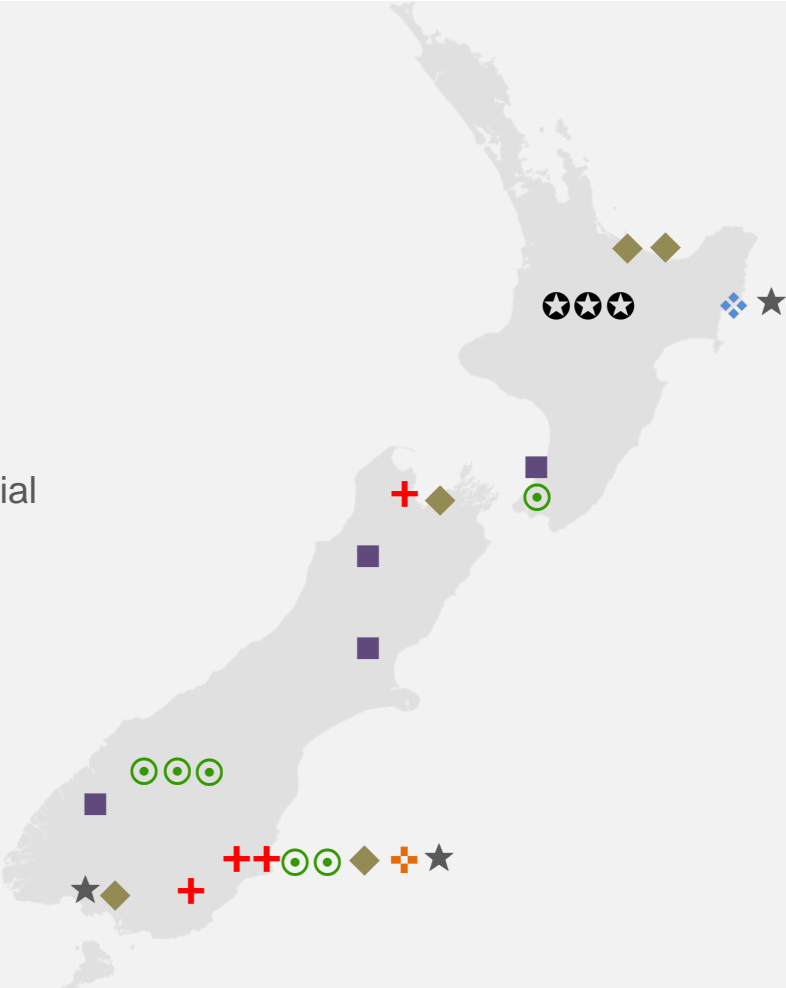


# About Spark Energy

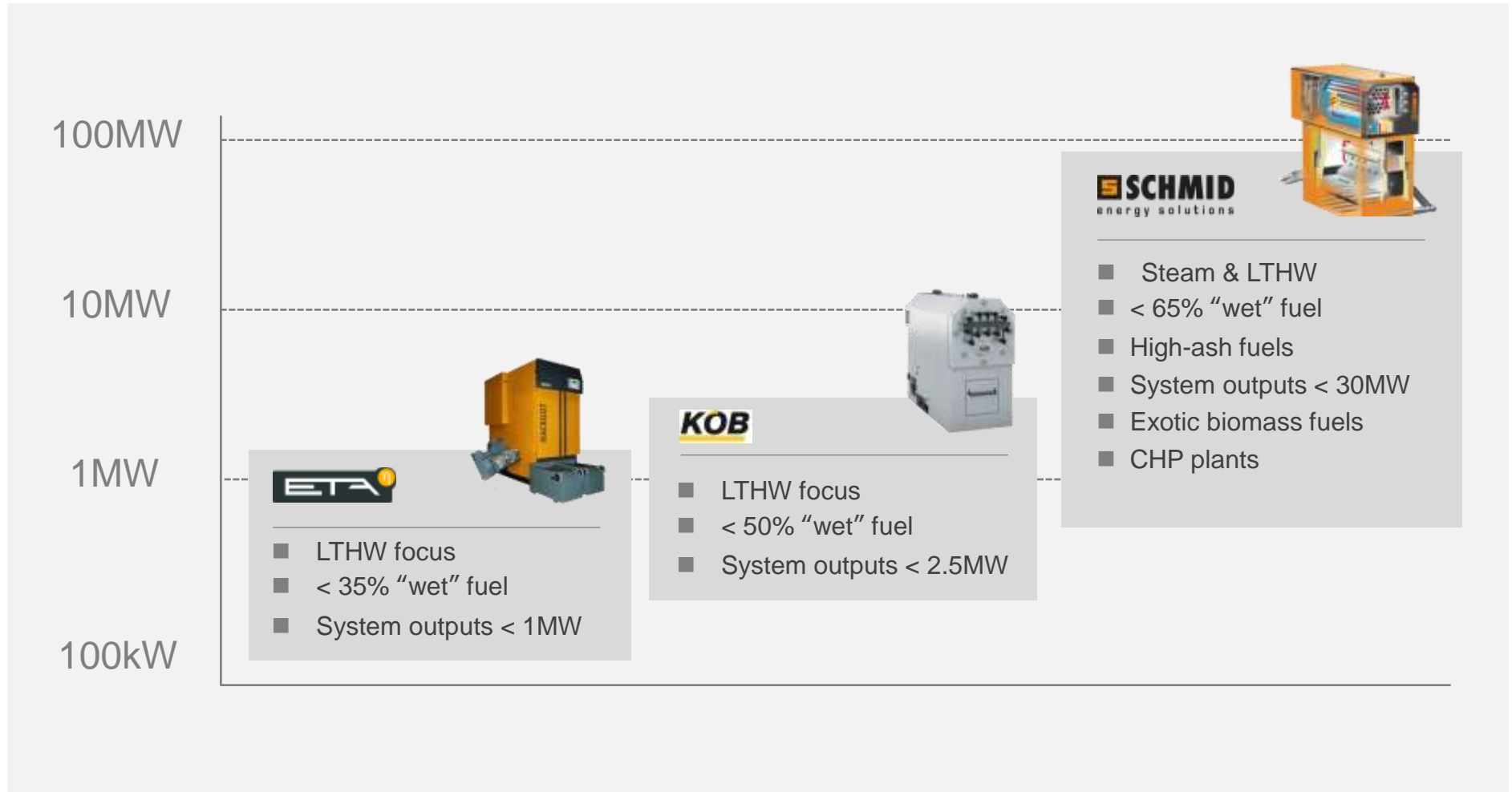
- Fully-integrated wood energy solution provider
  - Design of wood energy systems (wood chip or pellet fired)
  - Supply, installation and commissioning of wood boilers
  - Supply of fuel-grade wood chips
  - Wood energy contractor (e.g. finance, maintenance)
- Founded in 2007
  - Specialist wood-energy-for-business company
  - Nationwide client coverage
  - In-house servicing and commissioning engineers

# Diverse client portfolio across NZ

- + Healthcare
- ❖ Public pool
- + Aged care
- ⊛ Prisons
- Tourism/hospitality
- ◆ Schools
- ★ Process heat
- ⊙ Space heating commercial



# Technology to suit all applications



# A case for outcome-based procurement

# Project parts highly interlinked

- **Boiler selection**
  - Pre-project load analysis
  - Biomass boiler type (firebox design, boiler size, price/benefit analysis)
- **Fuel handling**
  - From hopper to boiler, from truck to hopper (speed, particle size)
  - Hopper sizing and type
- **Wood fuel options**
  - Woody biomass vs wood chips vs wood pellets
  - Availability, price expectations

# Alignment of parts requires expertise

- Strong understanding of array of technologies
  - Wood boilers
  - Fuel handling systems
- Indepth knowledge of fuel prices and availability
  - Wood chips vs biomass vs pellets vs miscanthus etc.
  - Biomass boiler is 20 year+ investment, fuel source(s) must be aligned to investment cycle
- Familiarity with regulatory environment
  - Health & Safety, Air Plans, Boiler code etc.

# Traditional approach often not suitable

- Risk of silo-based approach to design
  - Can't reasonably expect project managers, mechanical engineers, CFOs etc. to understand ramifications of technology/fuel choices
- Lack of indepth knowledge across “the parts”
  - Specifiers are quickly catching up on the merits of wood energy
- How to manage tension between project objectives
  - Project delivery: keep capex cost down
  - Operational delivery: keep fuel cost low, low maintenance costs



# Outcome-based delivery is the answer

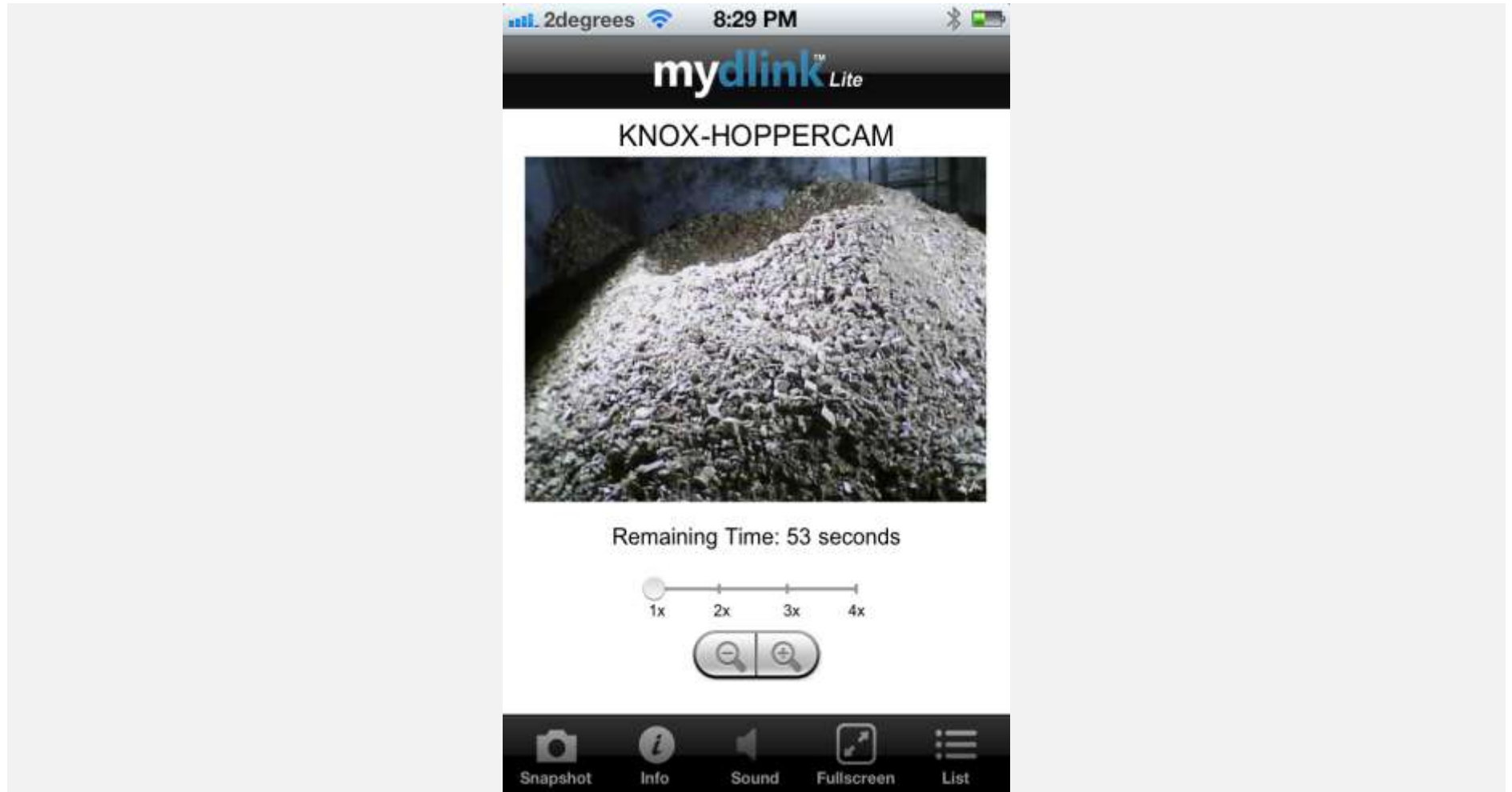
- Boiler efficiency and heat availability
  - Energy payment by heat metering, not fuel volume delivered
  - For example, boiler to deliver heat 98% or more of available hours
- Hopper and fuel handling design
  - Hopper working capacity, speed of conveying, “uptime”
- Fuel pricing and supply terms
- Support and parts availability
  - e.g. callout response time, critical parts availability

# Partnership approach delivers results

- Procure for success with a long-term perspective
  - Focus on delivery of project payback to heat user
  - Ensure accountability is embedded in service levels
  - Eliminate traditional “deliver contract, then out” short-term focus
- “Peace of mind” for heat user
  - Performance risk transferred to wood heat provider
  - Long-term nature of relationship warrants investment by service providers in infrastructure that benefits heat user

Performance-based service delivery  
drives innovation

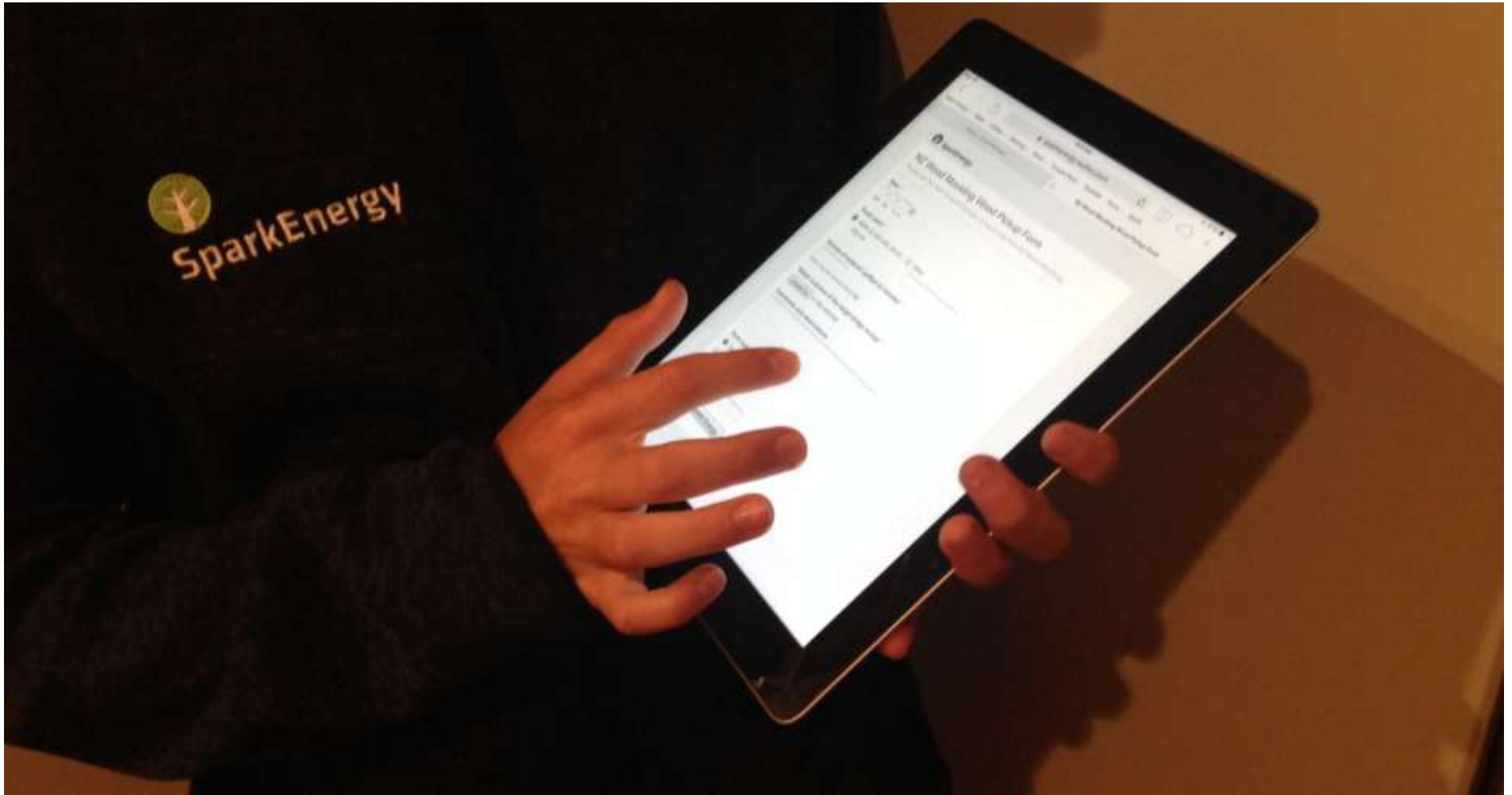
# Service innovation – Hoppercam



# Awareness innovation – Wood 101 App



# Support innovation – Cloud auditing



Delivering great outcomes across NZ

# Medium-commercial systems



Aro Ha district heating



Wakari Hospital 950kW



Knox College 540kW



# Small commercial systems



Ashburn Clinic 200kW



Spark Energy 200kW



BRANZ 130kW

# Investing in wood energy future

# Dunedin biomass processing centre



# Underlying processes are simple...



**...using commonly available plant...**



**... yet right tools key to good fuel**



# Wood fuel supplier checklist

- Stock (seasoning, supply security)
- Diversified sources of raw material (risk reduction)
- Concreted yard (insurance against contaminants)
- Mechanised drying plant (and backup solutions)
- Materials handling equipment (incl. redundancy)
- Under-cover chip storage (supply continuity)
- Trucks to suit site-specific delivery requirements

# Summary

- **Wood energy sector is well resourced and ready**
  - Extensive experience built up during past decade by multiple vendors
  - Specifiers quickly catching up with developments in wood energy
  - Others have gone before you, with success!
- **Design/procure to deliver “ownership” of outcomes**
  - Starts in concept phase, needs to be highly site/region sensitive
  - Engage with boiler technology providers and fuel vendors early on
- **Market moving to performance-based contracting**



# Q&A?

Eduard Ebbinge, Spark Energy

**Phone** 03 428 2992

**Mobile** 021 766 110

**Email** [eduard@sparkenergy.co.nz](mailto:eduard@sparkenergy.co.nz)

**Web** [www.sparkenergy.co.nz](http://www.sparkenergy.co.nz)

