Assessment of Electric Vehicle Connectivity Across APEC Member Nations

Ms. Alina Dini
Director, Verdant Vision

39th Meeting of the Expert Group on Energy Efficiency & Conservation (EGEE&C)
APEC Expert Working Group, Energy
28 February 2012

Who We Are

- **Verdant Vision** is Australia's leading provider of independent, expert services for electric vehicle readiness, deployment and evaluation

- Service to all segments of the EV market
- Our clients include:
  - Vehicle Manufacturers, Infrastructure Providers and Component Suppliers
  - Local, State and Federal Government Agencies
  - Electric Utilities
  - Land Developers
  - Motoring Services
  - Non-Government Organisations
  - Other Consultants/Researchers

- Over 15 years working in **renewable electric transportation**

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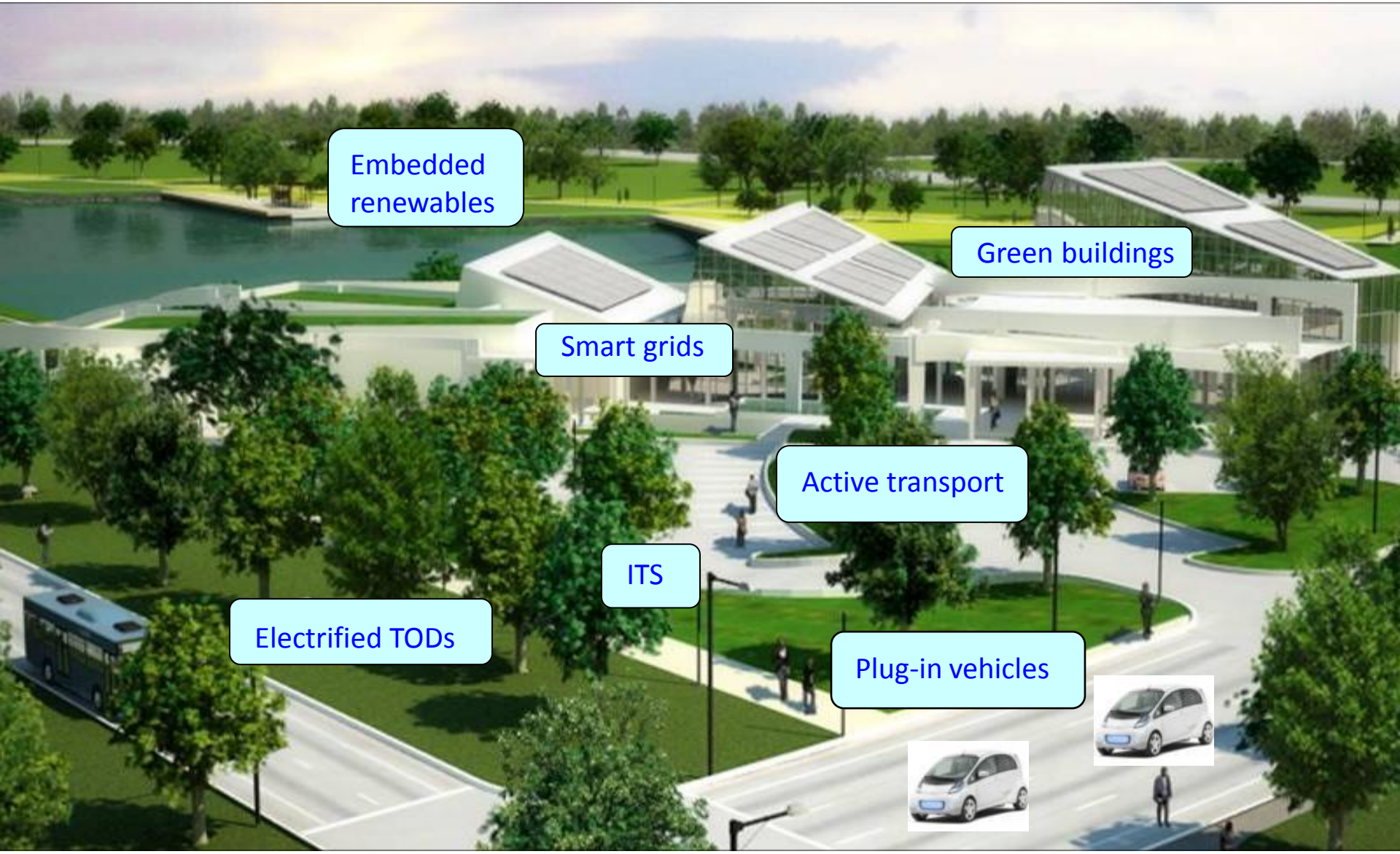
Our Verdant Vision



New Zealand Project Sponsors

Energy Efficiency and Conservation Authority
Te Tari Tiaki Pūngao

- Established up by the New Zealand Government and overseen by the Minister for Energy and Resources
- Promotes energy efficiency, energy conservation, and the use of renewable sources of energy
- Provides services to businesses and households, including programs to relating to electric vehicles and renewable energy deployments
- Various partnerships with private sector, community groups, industry associations, and central and local government bodies

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Stock-take of Electric Vehicle Connectivity

Expert Working Group on New and Renewable Energy Technologies (EGNRET)

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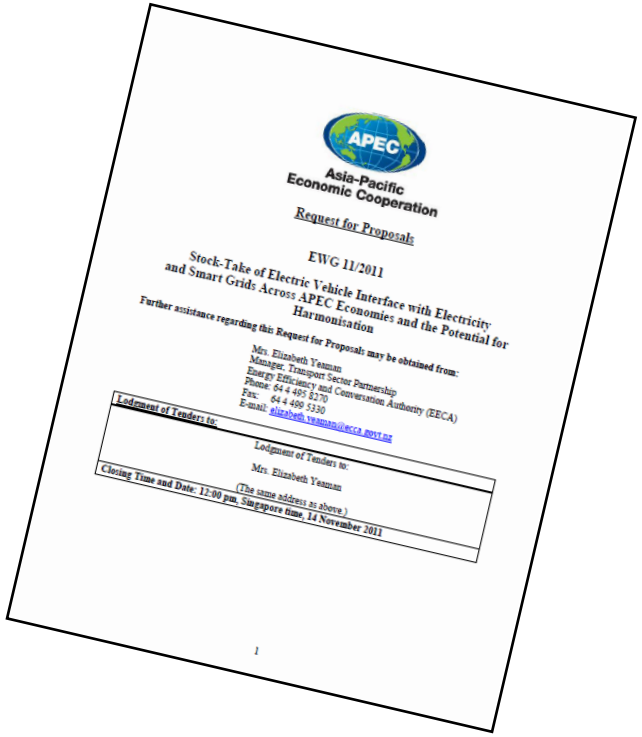
Stock-take of Electric Vehicle Connectivity

Key Project Objectives:

1. Survey and summarize electric vehicle (EV) connectivity conditions
2. Identify potential barriers for trade
3. Identify areas of cooperation (i.e. reduction of trade barriers)



Asia-Pacific Economic Cooperation

Request for Proposals

EWG 11/2011

Stock-Take of Electric Vehicle Interface with Electricity and Smart Grids Across APEC Economies and the Potential for Harmonisation

Further assistance regarding this Request for Proposals may be obtained from:

Mrs. Elizabeth Yeamun
Manager, Transport Sector Partnership
Energy Efficiency and Conservation Authority (EECA)
Phone: 64 4 495 8270
Fax: 64 4 499 5330
E-mail: elizabeth.yeamun@eeca.govt.nz

Lodgment of Tenders to:

Mrs. Elizabeth Yeamun
(The same address as above)

Closing Time and Date: 12:00 pm, Singapore time, 14 November 2011

1

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Scope of Work – Potential Barriers to EV Trade

Potential Barriers to EV Trade

- EV Connectivity Architectures
- EV Marketplace

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Charging Topologies

Level 1

Level 2

Level 3

Inductive

Charging Level	Circuit Rating (per phase)	Power (kW per phase)	Charging Rate* (km/h)	Charge Time* (mins. For 40km)
"Level 1"	AC - 230V / 15A	3.5	19	125
"Level 2"	AC - 230V / 30A	6.9	38	63
"Level 3"	DC - 500V / 125A	50	278	9

* assumes typical electric vehicle consumption of 180 Wh/km

Battery swap

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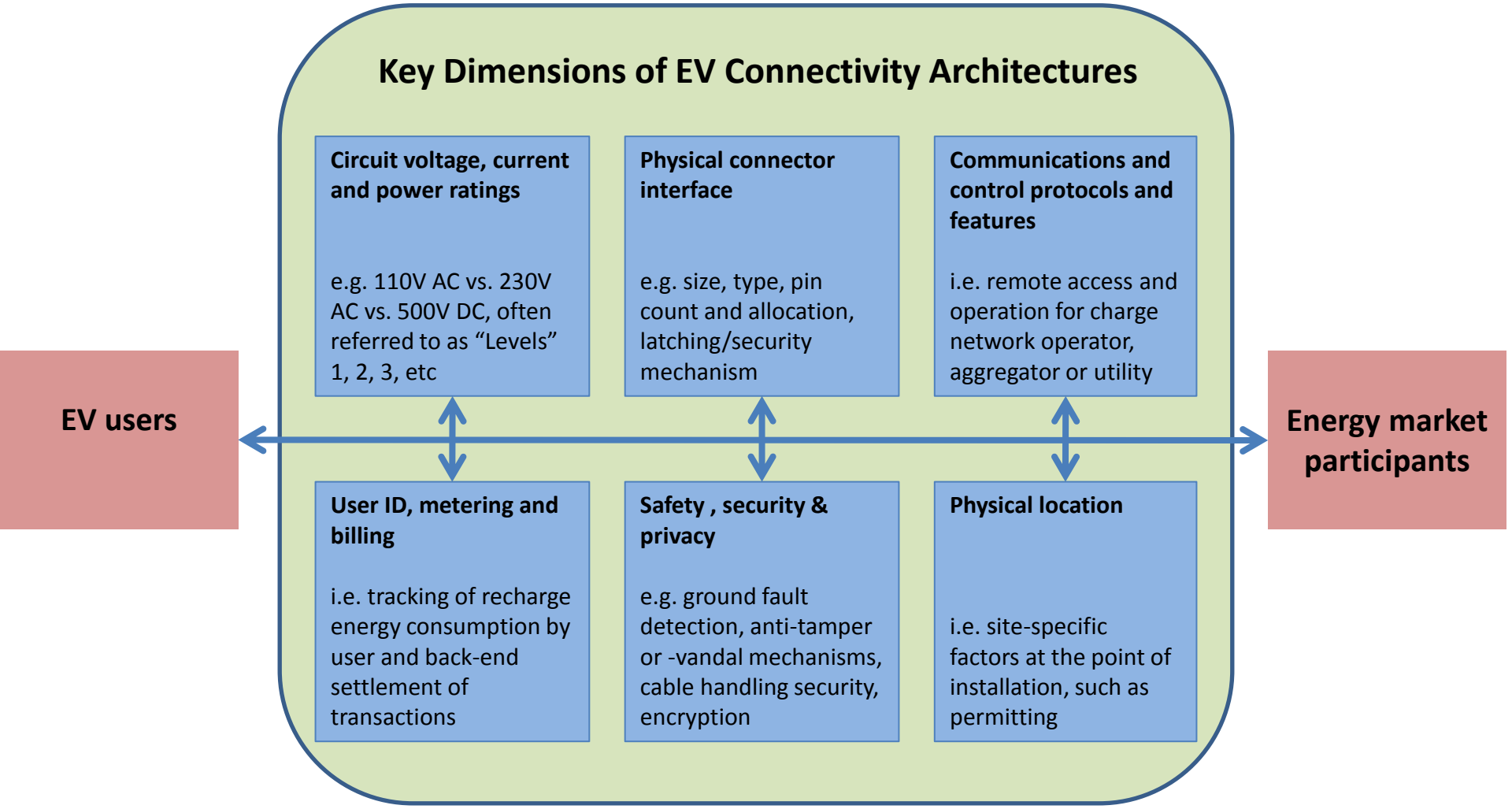
EV Connectivity Architectures



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Plug-In Electric Vehicles

Chevy Volt

Renault Fluence EV

Mitsubishi iMiEV

Toyota Prius PHEV

Smart ed

Nissan Leaf

Mini E

Tesla Roadster

Toyota FT-EV

Ford Focus EV

Mercedes Bluezero EV

Th!nk City

Coda Automotive

Fisker Karma

Vauxhall Trixx

BYD E6

Chery S18

Detroit Electric

Dodge Circuit

Subaru Stella

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More Plug-In Electric Vehicles

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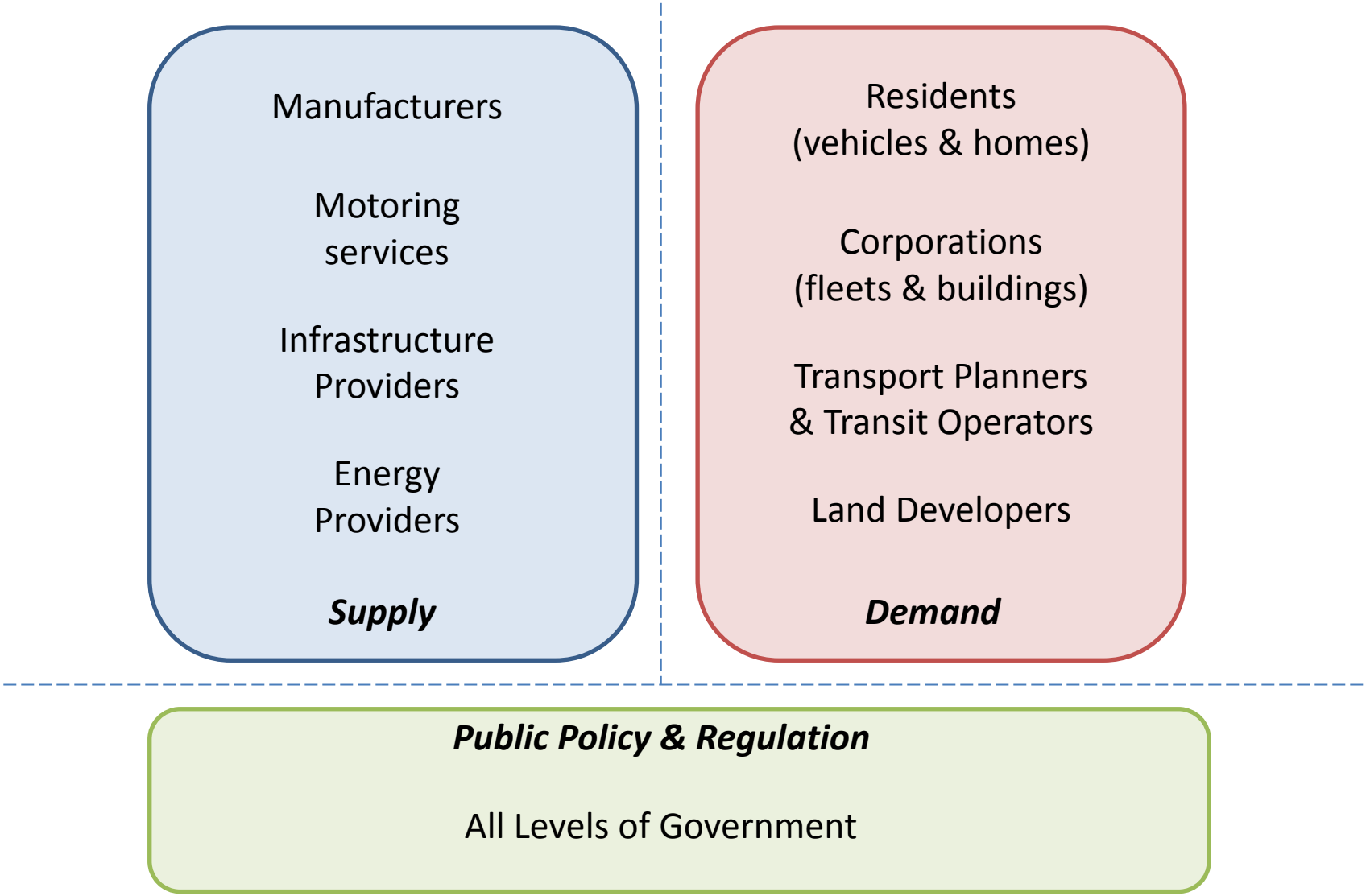
EV Marketplace



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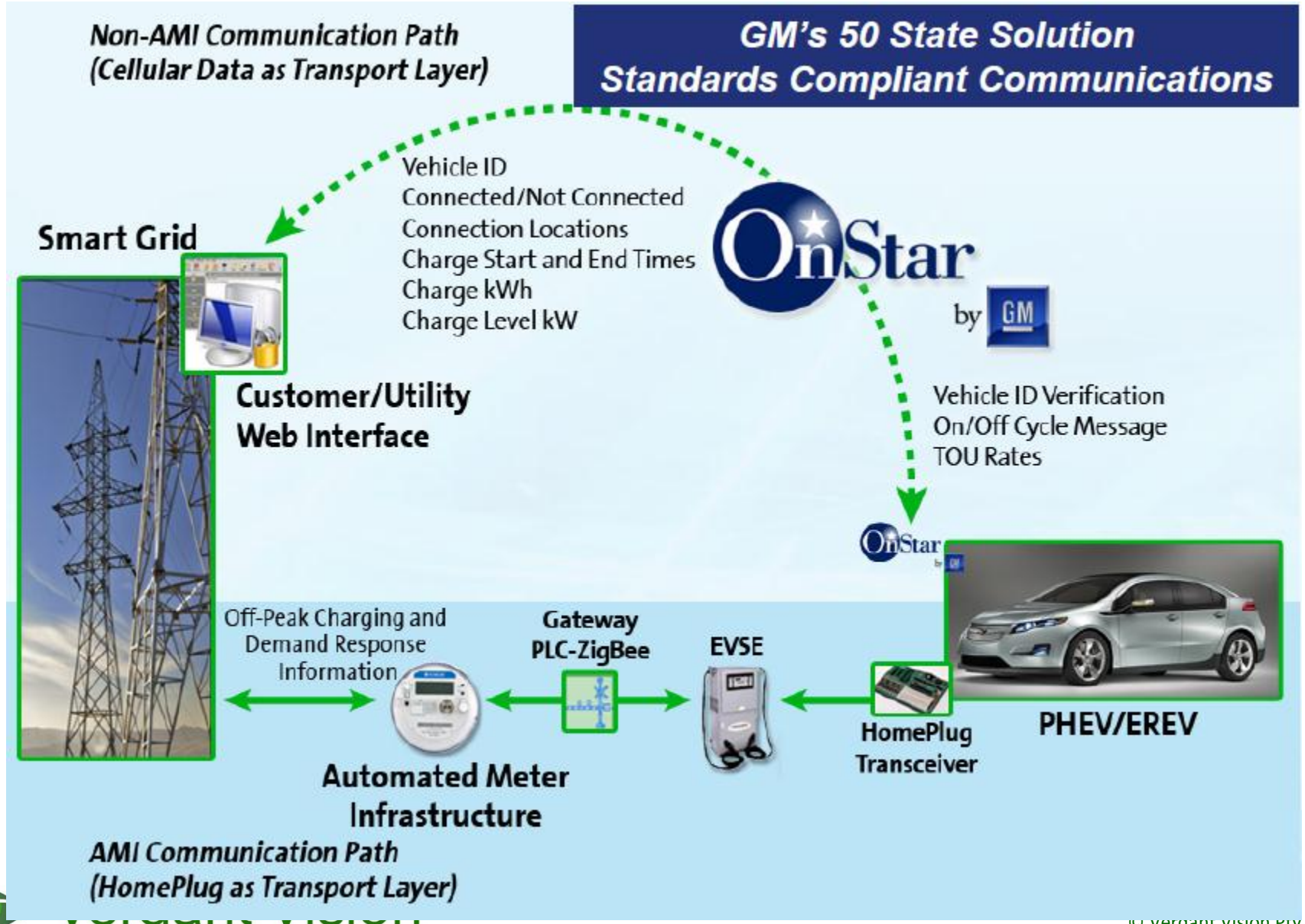
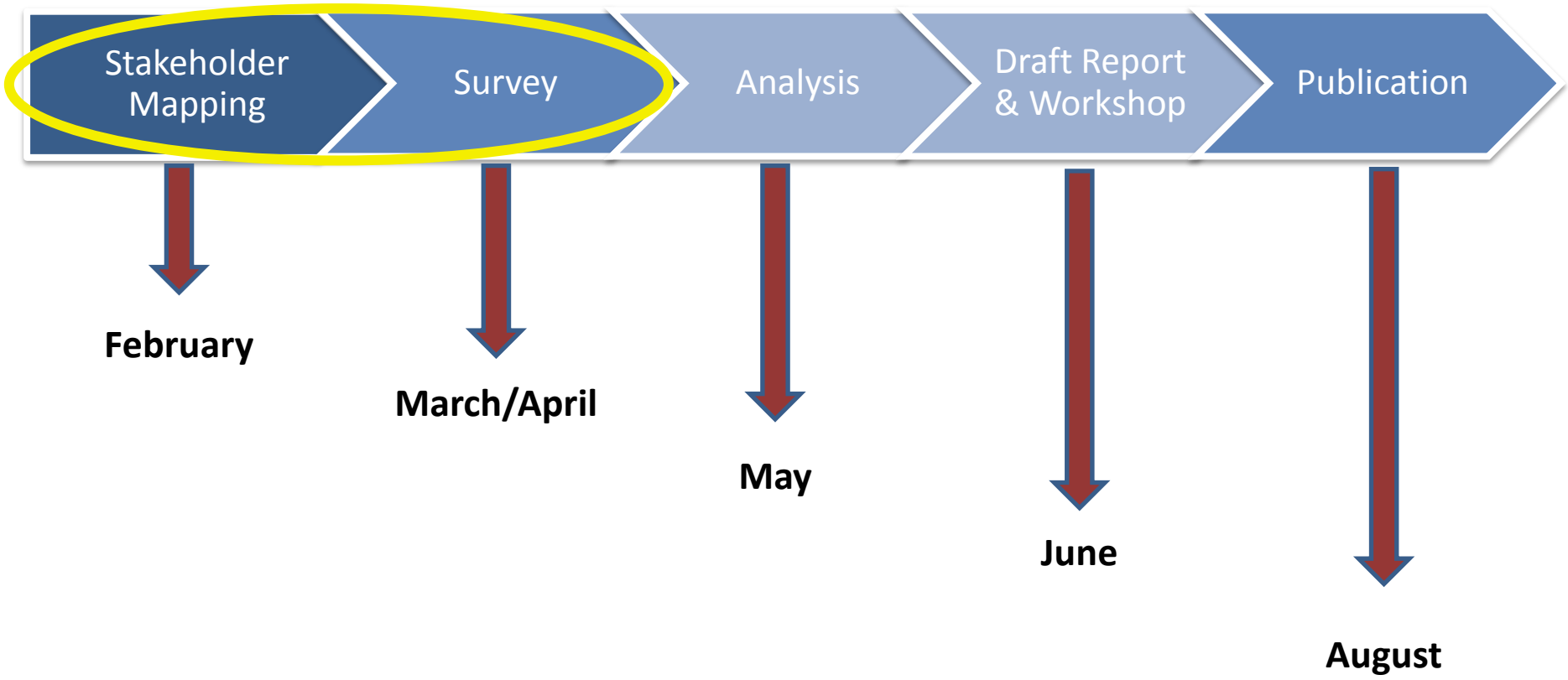
EVs and Smart Grids Architecture



Key Milestones



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Who do YOU think we should talk to?

- Key agencies or staff at all levels of government
- Electric vehicle manufacturers, importers or fleet operators
- Recharging infrastructure manufacturers, installers or operators
- Utilities (generators, distributors or retailers)
- Researchers (universities etc.)
- Other organisations
  - peak industry bodies, non-profits or community groups
- Any format welcome

Organization Name
Individual Name and Title

Location (City)
Email Address
Telephone Number

**Any other descriptors*
(e.g. project or product name)

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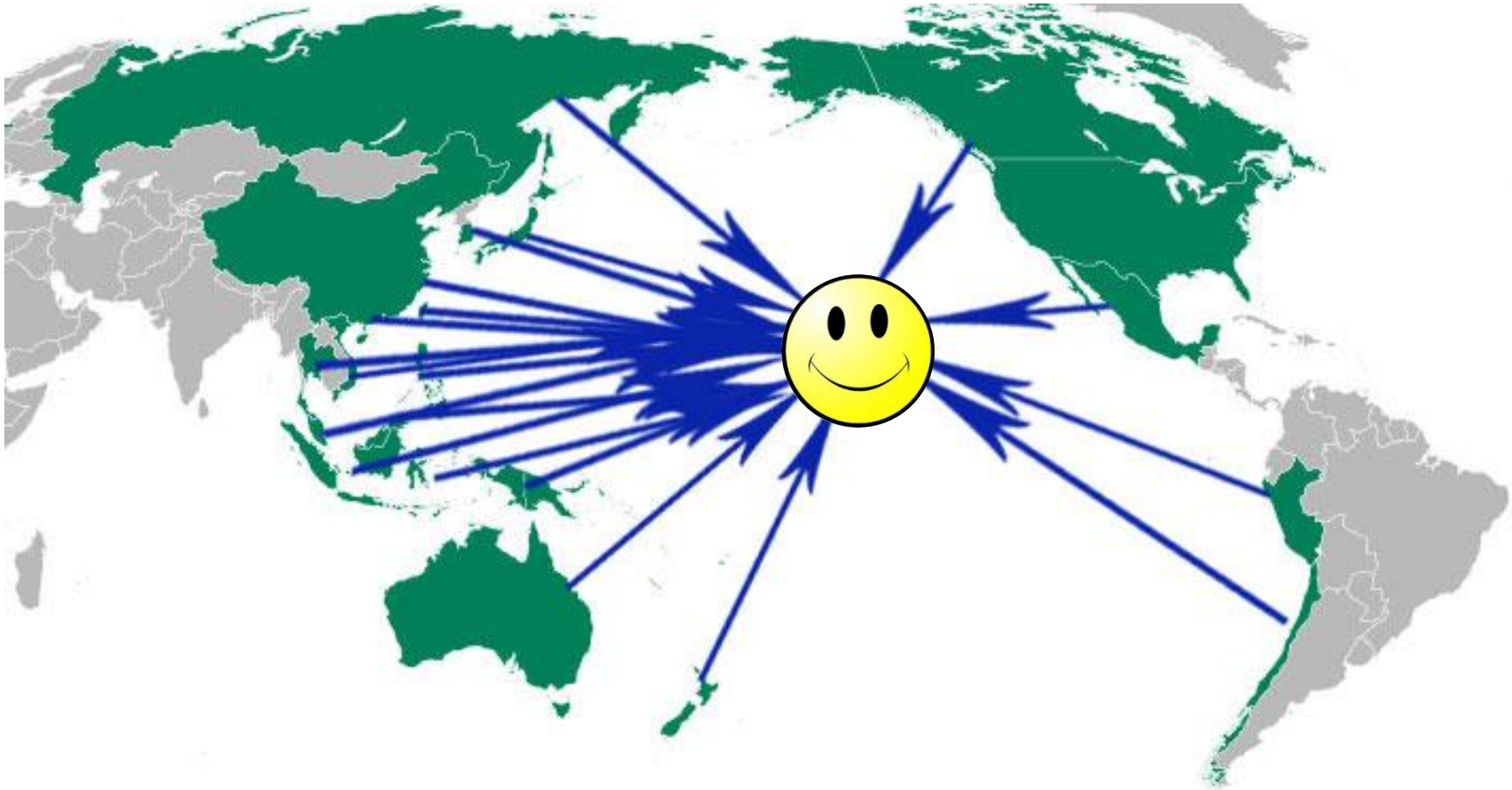
Survey Contacts



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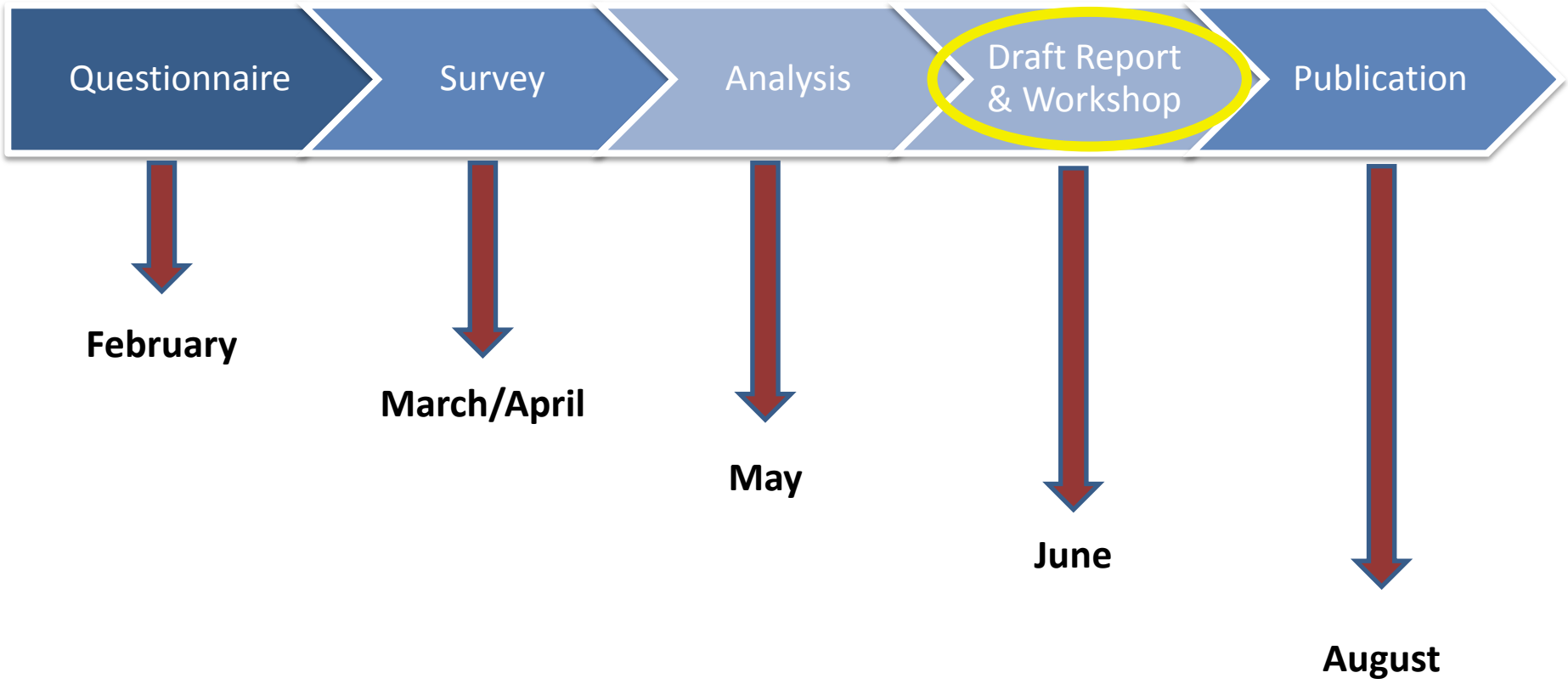
Key Milestones



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EV Connectivity Workshop – June 20, 2012

- Wednesday, June 20, 2012
- Wellington, New Zealand – Save the Date!
- Workshop to reveal draft findings on APEC EV Connectivity conditions
- Invited speakers, including international expertise
- Additional details forthcoming

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