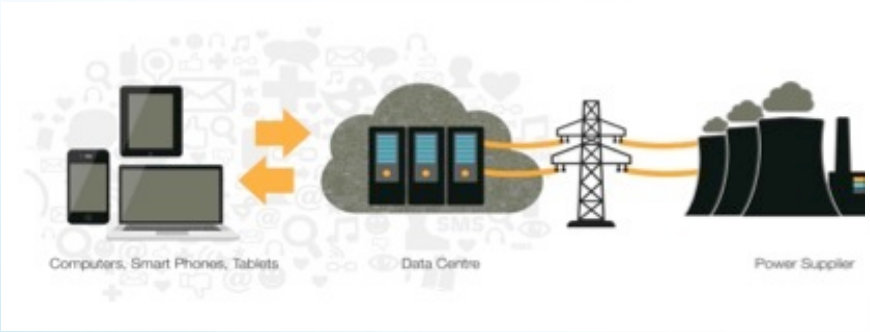
Asia Regional Green Power for Mobile Working Group
Co-organized by GSMA and IBS Tower
25-26 September 2013 – Jakarta, Indonesia

A 'SMARTER' GREEN TELECOM

- How catalytic potential of ICT can enable green telecom's integration into Indonesia's business process, government planning and community engagement





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Content

1. Meaningful Broadband Initiative
2. 'Smarter' Green Telecom in Closing the Digital, Energy & Green Growth Gaps
3. Green ICT and ICT for Green Growth
4. Examples of IT Applications
5. Final words

What is MB?

--Solving the broadband/ICT "gap" requires building a "**meaningful broadband ecosystem**"
- with both **supply- and demand- side** and **five types of innovations must proceed simultaneously**
- Selection up to **50 test-market districts/town (kabupaten/pemkota)** slated to receive fixed broadband at deeply discounted prices

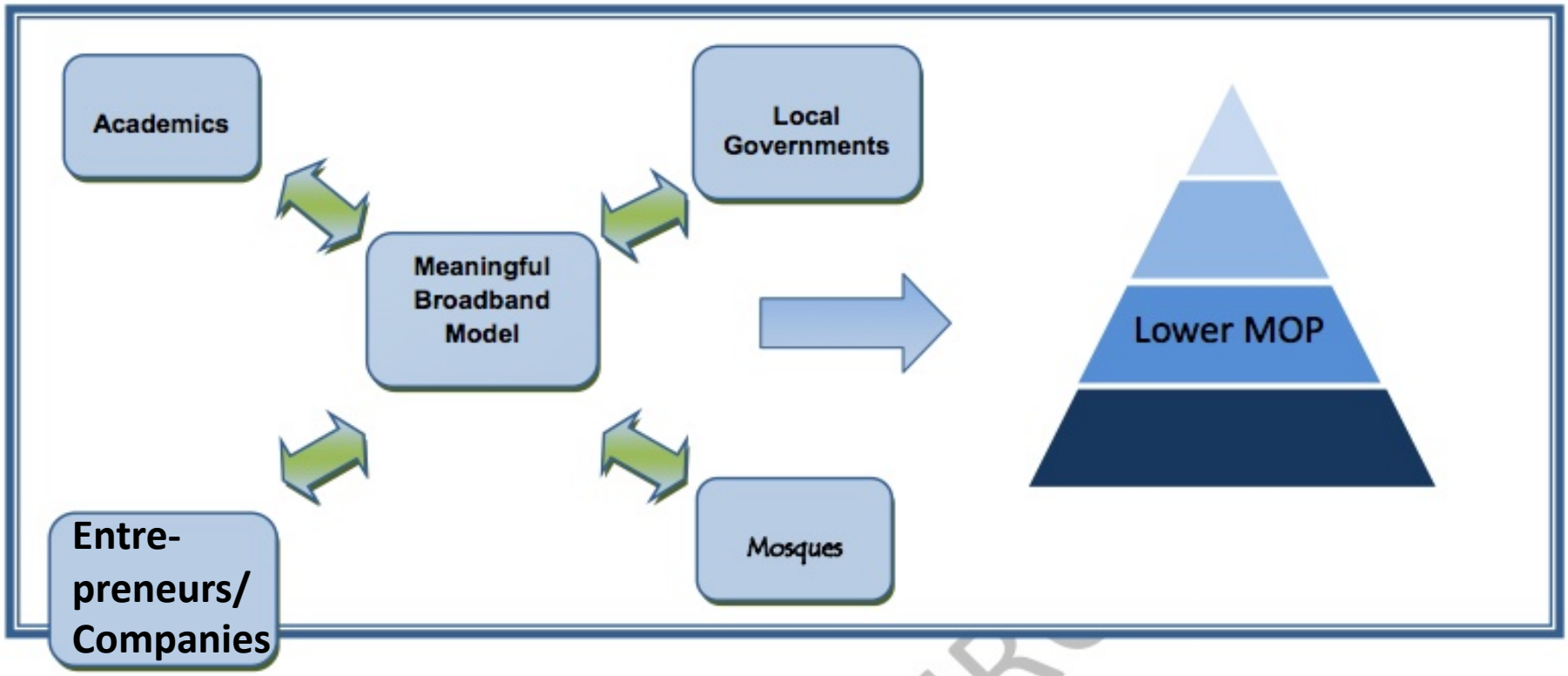


What is MBWG?

It is an inter-ministerial and cross-sectoral (government, business, academic and civil society organizations) working group hosted by the Indonesian ICT Council (DETIKNAS.org) at Cabinet Sec (SekKab)

- Part of Indonesia Broadband Plan (Bappenas/KPN)
- MB-'Green Programs : Alignment of "green growth" strategies with local-broadband deployments

Who are the key stakeholders in MB ecosystem?



Innovations, entrepreneurs and companies - examples

- Increasing access to energy, India OMC in partnership with BHARTI INFRATEL
- Mobile-for-Development-MECS-OMC-Power (GSMA.com) and ESCO model
- GRAMEEN TELECOM/BANK: Nobel-winner M. Yunus & Iqbal Quadir teaming up with entrepreneurs to built this globally successful model

What are the MB programs?

Meaningful Broadband Congress developed by Digital Divide Institute (DDI) activates the new Indonesian government-approved plan for the massive and immediate ramp-up of broadband internet in Indonesia while also putting high-speed internet to "meaningful use" -- in the economy, for SMEs, for governmental units, for the educational sector and ultimately for consumers

Topics covered at the Congress include:

- Selection of 50 test-market regencies (kabupaten) slated to receive fixed broadband at deeply discounted prices
- Accelerated consumer adoption of LTE, Reinforced by public-policy reforms
- "Meaningful app" campaign in Bahasa language that lower-costs, increase revenue and transfer skills
- The nation's regional universities as drivers of meaningful broadband
- Activation of next generation smart devices for schools and informal learning sector
- Extend fixed broadband to accelerate local governments and schools
- Alignment of "green growth" strategies with local-broadband deployments
- Integration of human-resource development strategies into "six corridors" of MP3EI.
- Reinvention of Warnets for e-commerce-led SME incubators

- The MB Congress and Connectivity Indonesia event is a side-event at the Indonesia International Infrastructure Conference and Exhibition (IIICE-InfraSummit), November 13-15, Jakarta Convention Centre
- Most government agencies and regional governments are represented
- http://www.indonesiainfrastructure.org/

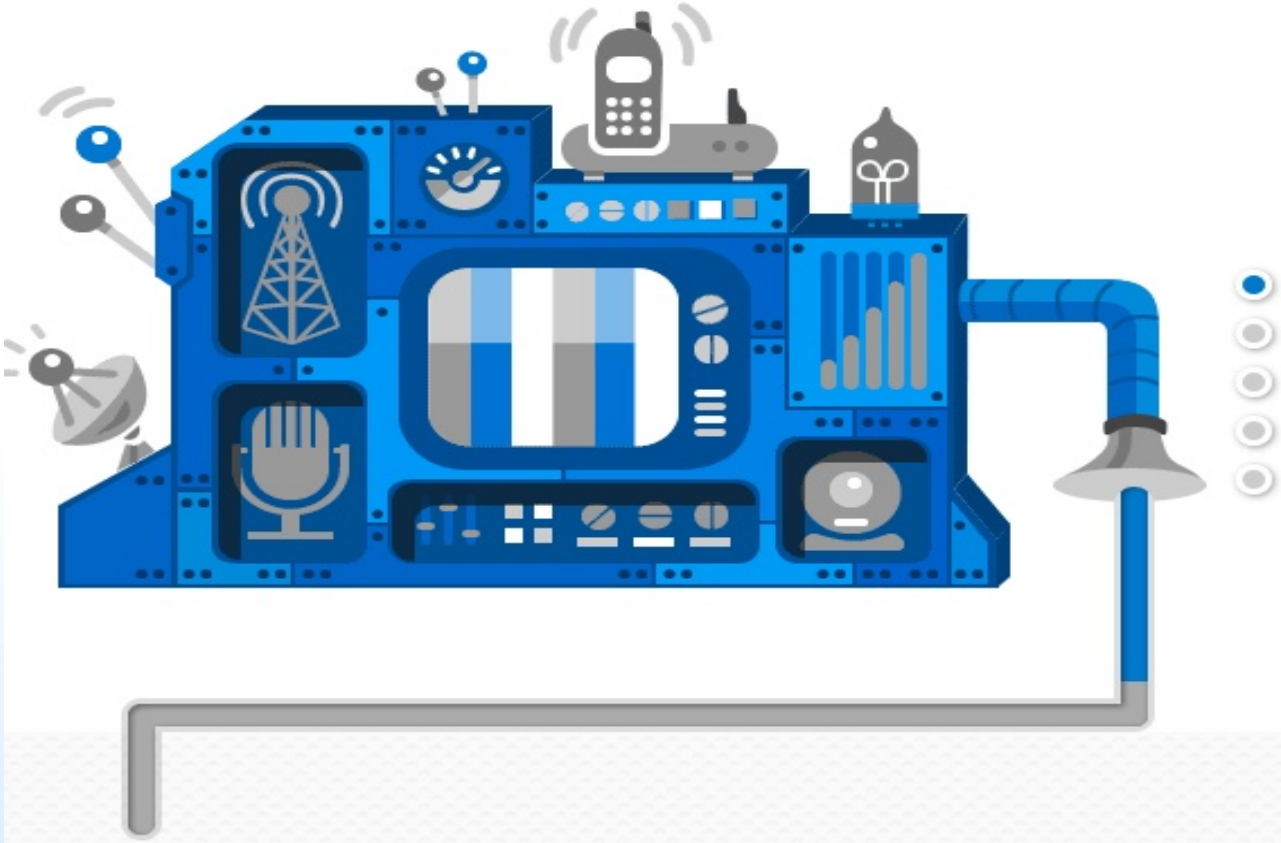


What is 'Smarter' Green Telecom?

- Dealing with Telecom/ ICT based on the notion that: * ICTs are "General Purpose Technologies" that can affect an entire economy like s fuel-engines & aeroplanes (a)

* Enables "Network Economy" effects – its powerful positive feedbacks (fax, the Internet) and indirect network effects (software) (b)

* Greener and Healthier Ecosystem for ICT services requires greater transparency



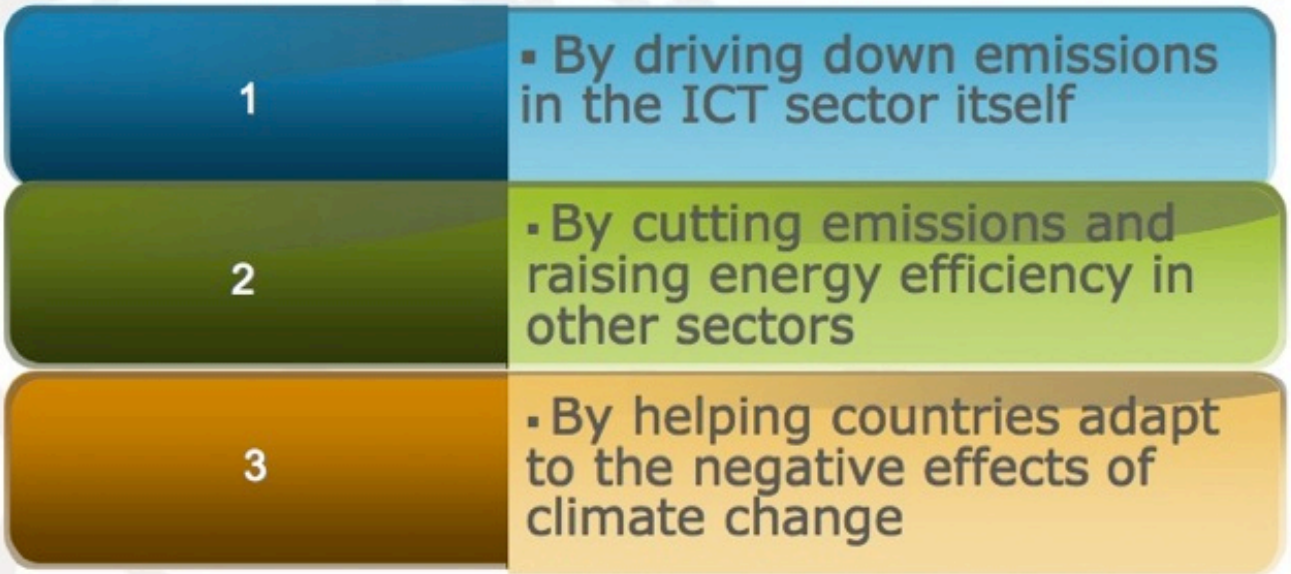
Source: Bandwidth.com

Smarter Green Telecom
= Ecosystem view and fully informed view of significance of Telecom-IT-Energy as the new critical element that drives the 21C economy as well as that can drive energy efficiency

(a) Wikipedia
(b) "Information Rules" book

How can Green Telecom/ICT close the 'Green Growth Gap'?

Why ICT Matters?



--> Green ICT/Telecom

} ICT 4 Green Growth (Green 'with' ICT/ Telecom)

Malcolm Johnson Director, TSB, International Telecommunications Union

ICT for Green Asia Conference, Jakarta 1 Nov. 2011.

- The GG gap between the "business-as-usual" path of socio-economic development within a country and one that can produce a path which could lead that country's Emissions Target (Indonesia's -26% to -41% with 7% Econ. Growth))and/or proportional contribution to lead to a 350 ppm of CO2E in the atmosphere in a safe upper limit to avoid a climate tipping point (J.E. Hansen, 2007 & B.Mc Kibben, 2007)

"Green ICT including Green Energy for Telecom/IT" vs. "ICT for Green Growth"

Reducing IT Footprint
Green in ICT (3%)

Green ICT or
Sustainable computing or
Greening ICT infrastructure,
CEO/CFO, Staff and Users

IT Enabling CO_2 Reduction
Green through ICT (97%)

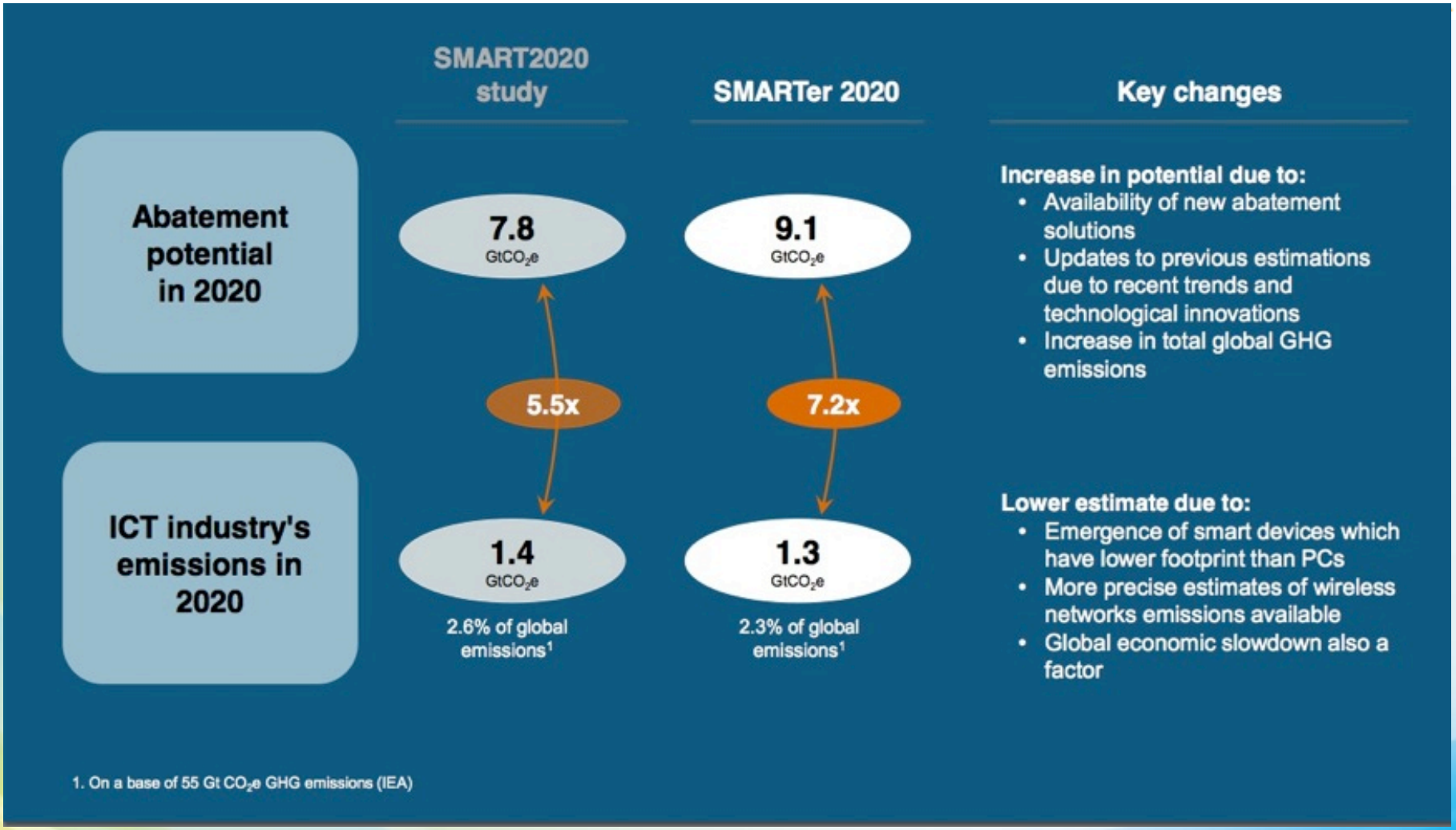
ICT for Green Growth, for
Low-Carbon & for Low-Waste
Green Knowledge 4 Stakeholders

- Green Technology
- Energy
- Transport
- Manufacturing
- Buildings
- Other sectors (health, education, smart cities...)

Grow GDP $35b-$80b
Reduce Emissions 116 Mt CO2e
Create 70,000 Jobs (Australia)

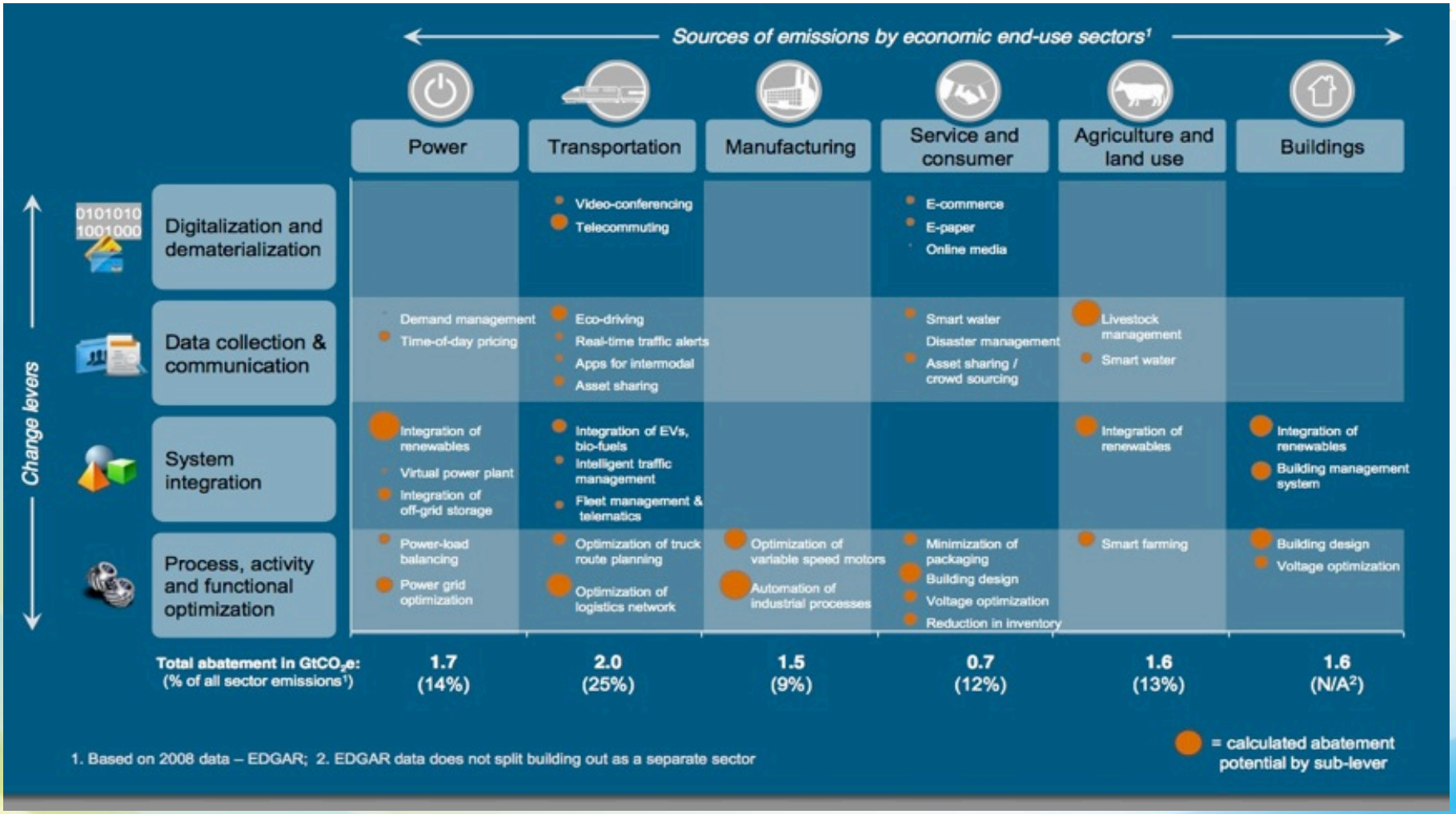
Source: AIIA GreenIT Whitepaper http://www.aiia.com.au/?page=greenit_whitepaper

ICT's Catalytic Potential - the abatement potential of ICT is 7 times the size of the ICT sector's own carbon footprint



Source: http://gesi.org/SMARTer2020

35 ICT-enablement abatement solutions identified in SMARTer 2020 Report



Source: http://gesi.org/SMARTer2020

2. ICT Applications to "Green" Business Development and Government Planning Processes

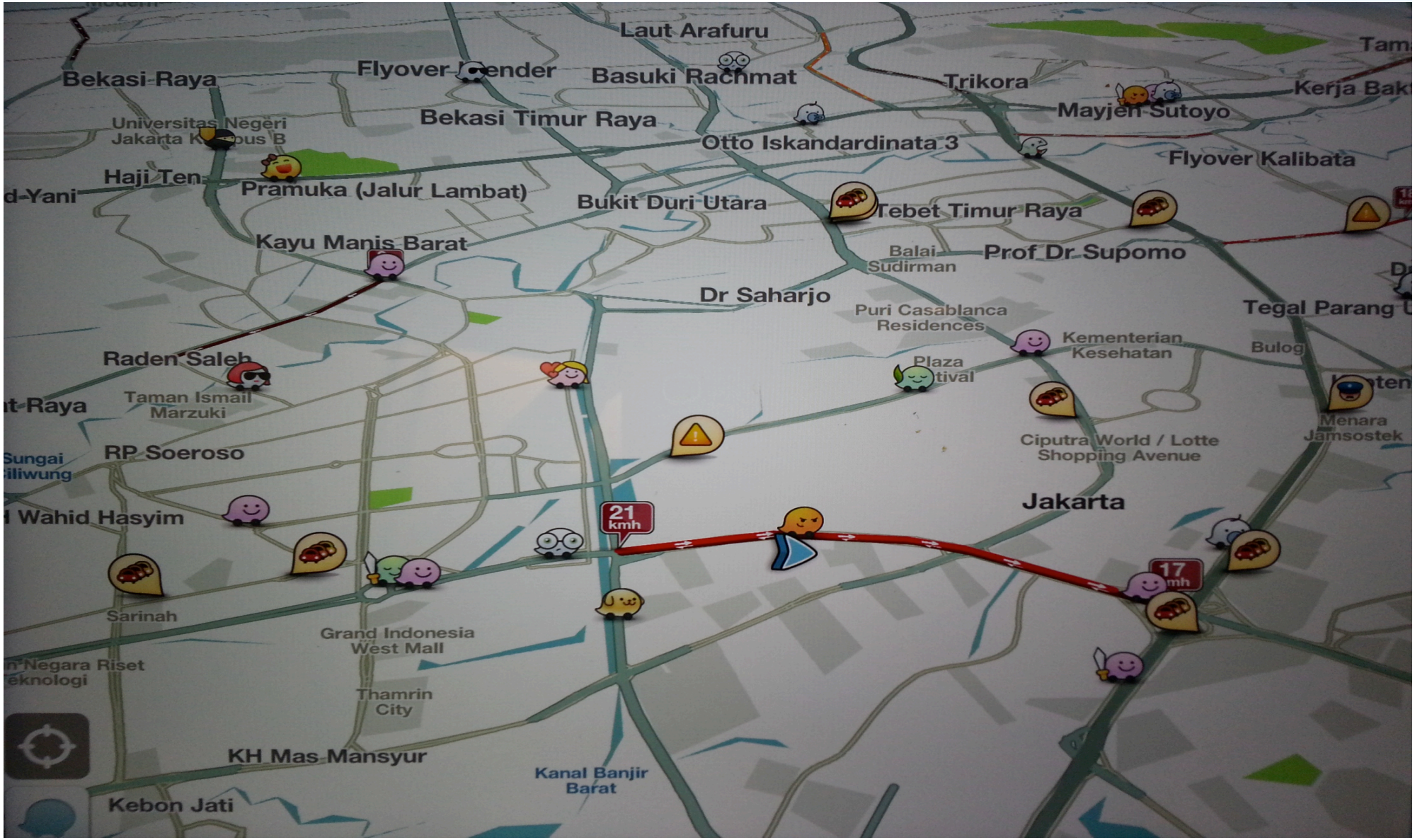
- **(1) Green ICT use 'inside':** Ensure that **Green ICT policies** are in place **with respect to** Equipment Lifecycle, End-user Equipment, End-user Equipment, Enterprise and Data Centre, ICT as Low-carbon Enabler and Green/Renewable Energy (Benchmark of ICT use inside organisations/offices: ICT uses between 15% to over 50% of the total energy – please do benchmark)
- **(2) ICT applications:** Ensure that planning takes account of **ICT Applications now in place** and are seen as "best practice" :

  – **ONE-MAP –** Authoritative Indonesia **GIS-based map (e.g. PIPIB-IMMv.4)**

  – Open Government (Gov 2.0)- Indicators/data sharing **(e.g. UKP4-BIG)**

  – **Crowd-sourcing monitoring** (Web 2.0) map (e.g. "citizens as sensors")
  → DOES ANYONE USE "WAZE.COM" TO NAVIGATE IN JAKARTA?

2. ICT Applications to "Crowd-Source" Community Engagement Process: WAZE.com

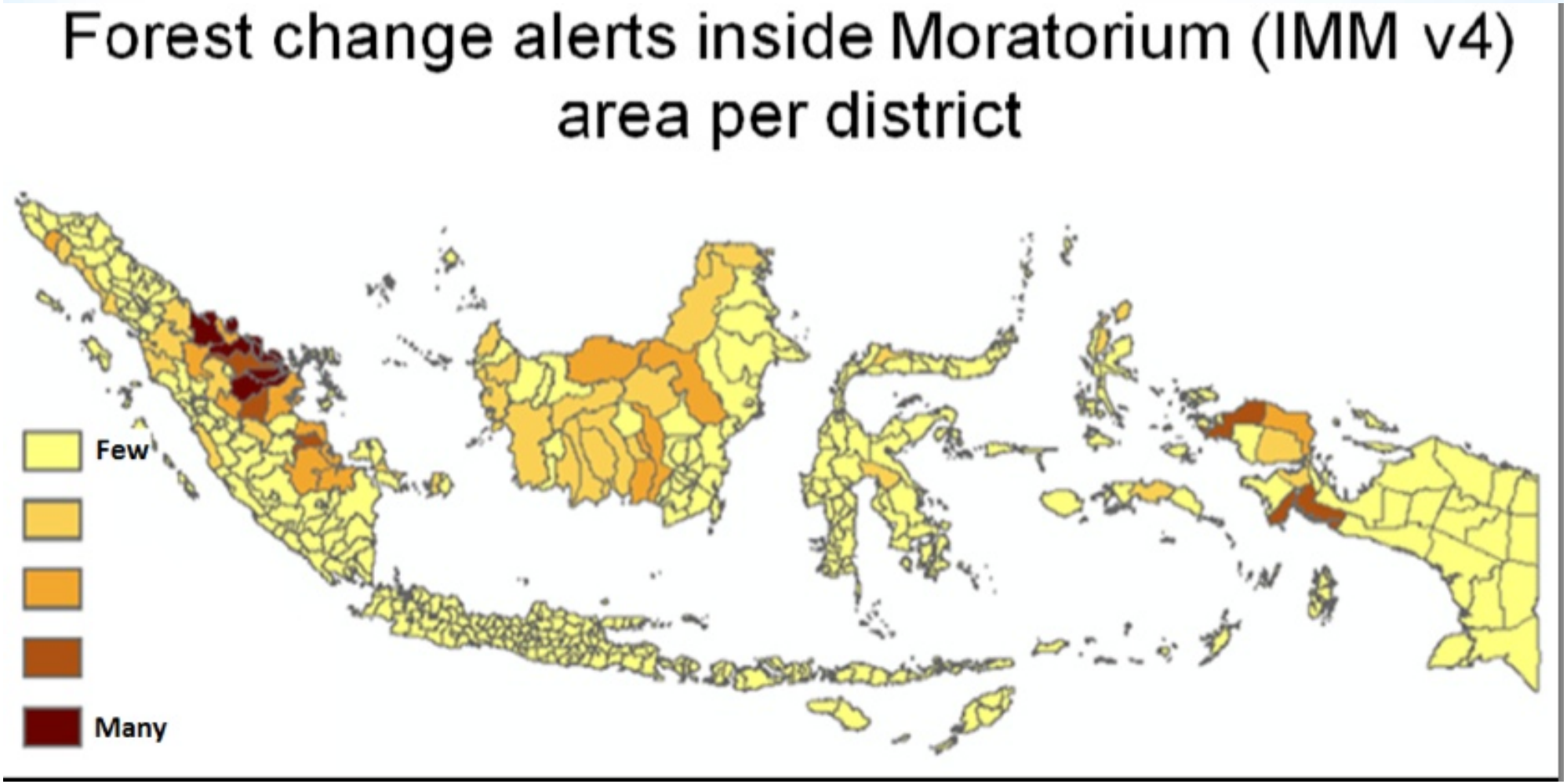


Actual and Potential Smart-Green Project Examples – Palm Oil – Land Use – Renewable Energy

- Telecom mobile operator or tower companies can be anchor clients to renewable energy operators (solar, bio-fuel, bio-mass and other) producers. **GSMA's Mobile Enabled Community Services** is offering many practical examples
- **Funding for "green" initiatives in Indonesia**:
  - **Green Prosperity Project** (US-MCC/Bappenas/MCA-I) soft-loans (over $200m) and grants (over $100m) program
  - **Indonesia Clean Energy Development** (USAID) program
  - **German GIZ** Renewable Energy Support Programme for ASEAN (ASEAN RESP) and others
- **World Resources Institute** (WRI.org) – App developed: Forest Cover Analyzer and Suitability Mapper used by business and government to reduce deforestation.

Actual Smart-Green Project #1

– Palm Oil & Bringing greater transparency in Deforestation, ICT/GIS map effective monitoring → Indicative Moratorium Map <revisi **Peta Indikatif Penundaan Izin Baru - PIPIB**>



Actual Smart-Green Project #2 – Forest Encroachment prevention and Participatory Land Use Planning (PLUP)



Ancestral Domain Map (ADM) of Ba'tan, Sub District Wara Barat, Kota Palopo, South Sulawesi
(Source: JKPP/BRWA)

Attributes of the ADM are instrumental in the REDD+ Taskforce **proposed conflict resolution** on concession overlapping, land tenure, forest estate gazettement, etc.

Published on Wednesday, 14 November 2012 23:34

SHARE

Indonesia: Indonesian Government Accepts Ancestral Domain Maps - Making Indigenous Peoples Visible Within The Nation State

Indigenous Peoples' Alliance of the Archipelago (AMAN) and Network for Participatory Mapping (JKPP) have officially handed over ancestral domain map registered in Ancestral Domain Registration Agency (BRWA) to the Indonesia's Geospatial Information Agency (BIG) and Presidential Delivery Unit for Supervision and Control of Development (UKP4). This is the initial handover done by AMAN and JKPP. As a start, being submitted are 265 maps of ancestral domains covering 2,402,222 hectare wide.

http://www.futuregov.asia/articles/2012/nov/08/thailand-prevents-forest-encroachment-gis-map/

Actual Smart-Green Project #3 – Putting some "smarts" in



Crimemapping.com displays incidents in Miami, Florida. Clicking an icon reveals details about the crime.

Source: ESRI "Gov 2.0 Citizen Engagement"

Actual Smart-Green Project #4 – Putting some "smarts" in



People can click a forest conservation easement (yellow) and report a violation directly to the planning department.

Source: ESRI "Gov 2.0 Citizen Engagement"

Actual Smart-Green Project #5 – Putting some "smarts" in aggregating testimonies of World Bank's PNPM* 'success stories'



* National Program for Community Empowerment : http://pnpm-support.org

Actual Smart-Green Project #6 – Putting some "smarts" in Resource Use & Governance



AIR-PUTIH's innovative "SMS-Air" tool

- Citizen as sensor: reporting system SMS (for 2G devices), IVR, Social-Media (Facebook, Twitter, etc) & web-page suitable (for 3G Mobiles)
- Smart web portal - enabling better water access, distribution & governance for all stakeholders:
  http://malang.smsair.co
  http://makassar.smsair.co

- More benefits for low- and lower- middle income groups, additional facilities to be developed:
- Price/Water Distribution reporting
- Electricity/Energy distribution reporting
- User BTS signal reporting

Final remarks…



Indonesia - a highly competitive Telecoms & IT Sector with rapid growth in user numbers and especially in major, secondary/smaller cities & nearby areas

→ Intense competition and falling prices led to

*** under-investment in parts of the network &**

*** inconsistent service quality**

"They (the operators) have to think about how to improve their business" (T. Soedirdjo, PwC Indonesia*)



→ A smarter way: think healthy ecosystem!

→ Online transparency, this **will sit naturally as part of a smart, green & healthy ecosystem** of essential services to achieve green growth

→ All 'green' initiatives can take advantage of mobile growth - one of globally most rapid rise in mobile ownership ("world's most mobile centric country"#)

Questions?



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Speaker associated organisations

- AUSTRALIAN NATIONAL UNIVERSITY (Canberra)

  - Established as the only national research university to work on "research of national priority"

  - Research School of Computer Science (CECS – ANU)

    leading in these areas of research:

    artificial-intelligence, algorithms, and computer systems,
    software intensive systems engineering,
    logic and computation and
    information and human-centred computing

  (ICT Sustainability online course is offered within this research group)
  http://studyat.anu.edu.au/courses/COMP7310;details.html,

- The Foundation for IT Sustainability – ICT Sustainability Advocacy
  www.ffits.org www.greenitweek.org

- Exergy – Australia's Leading Energy Efficiency Consultants
  (specialists on Green Planning, Buildings and Data Centres)
  www.xgl.com.au