INTERNATIONALLY ALIGNED TEST METHODS AND PERFORMANCE REQUIREMENTS FOR TELEVISIONS

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Project Aim

To analyse the current television test methods to improve content, repeatability and reproducibility with a view to encouraging all APEC economies to use a harmonised test approach.

To propose a suite of performance levels that reflect reasonable technology steps and cover all televisions both currently available and under research and development around the world.

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TEST METHODS

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Test standards are the foundation for Energy Efficiency Programmes

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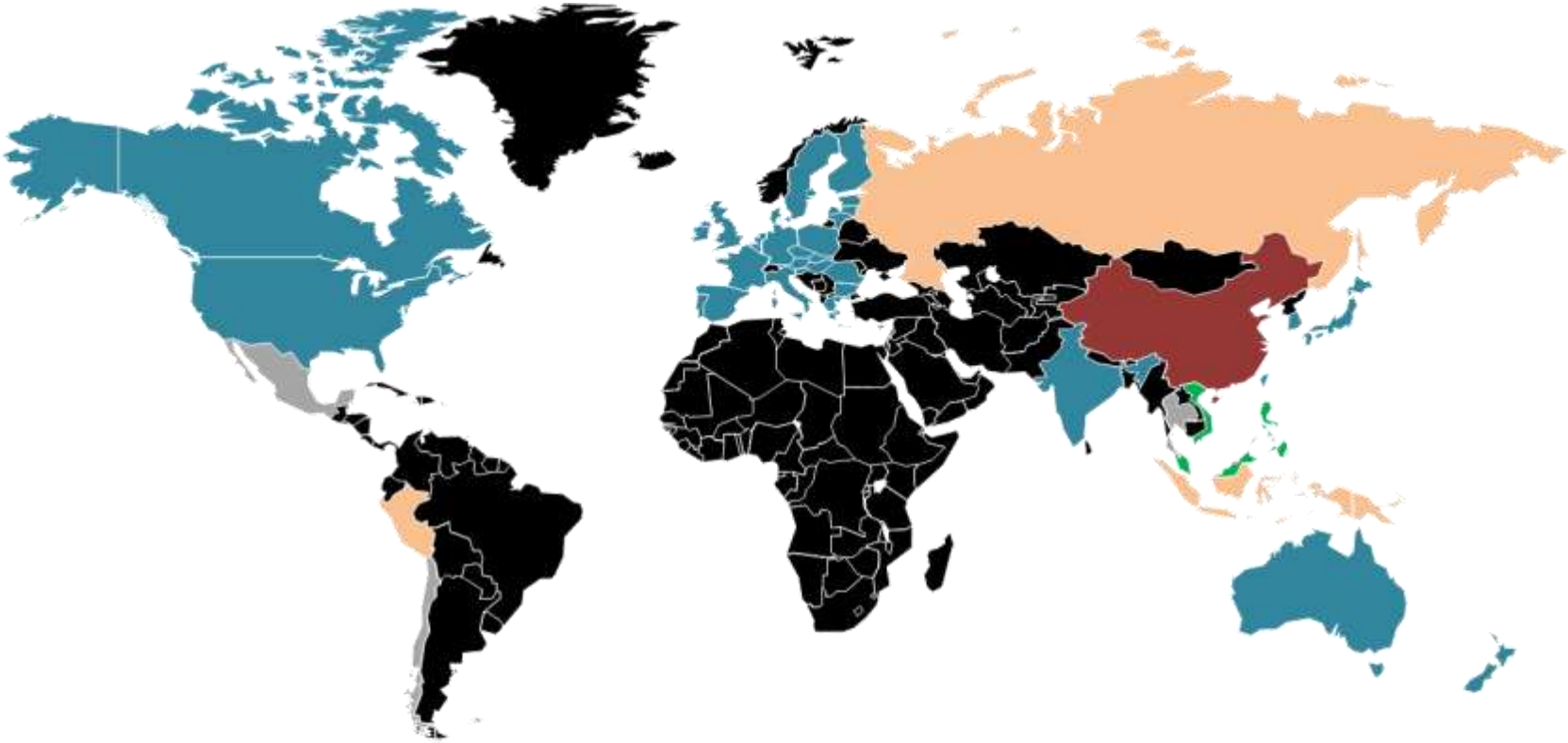

Key – national policy test standard

IEC62087 applied with no modification

IEC62087 applied with compatible modifications or additional test requirement

No standard

Incompatible use of selective parts of IEC62087

Only standby power covered

Country out of scope

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Test method improvements

Repeatability and Reproducibility

Compatibility with technologies and TV sizes

Results as close as possible to representing normal 'real-life' operation

Minimise load on test laboratories

Drivers for improvements

Technology changes

- UHD, 3D, internet video
- Image and video processing algorithms

Global variation

- Average picture and video

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EVALUATING ENERGY SAVING FUNCTIONS

Evaluating Energy saving - ABC

Auto Brightness Control

- Comfort and energy saving feature
- Adjusts screen brightness depending on room brightness

Different TVs have different approaches

Different test methods have different results

Different policies estimate different savings

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Recommendations

Important to evaluate savings with accurate data

- Ideally energy is reduced by approx 20%
- Varies from 8% to 31%

Standardising TV approach can maximise savings

Policy can be better designed to incentivise ABC implementation - latest US policy simulates this well

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ENERGY PERFORMANCE LEVELS

Comparing performance levels

Globally approximately 70 performance levels

- Some discriminate between technologies
- Generally straight lines
- Wide variation in performance
- MEPS allowance 3-4x greater than efficient TV power
- Most metrics favour large TVs

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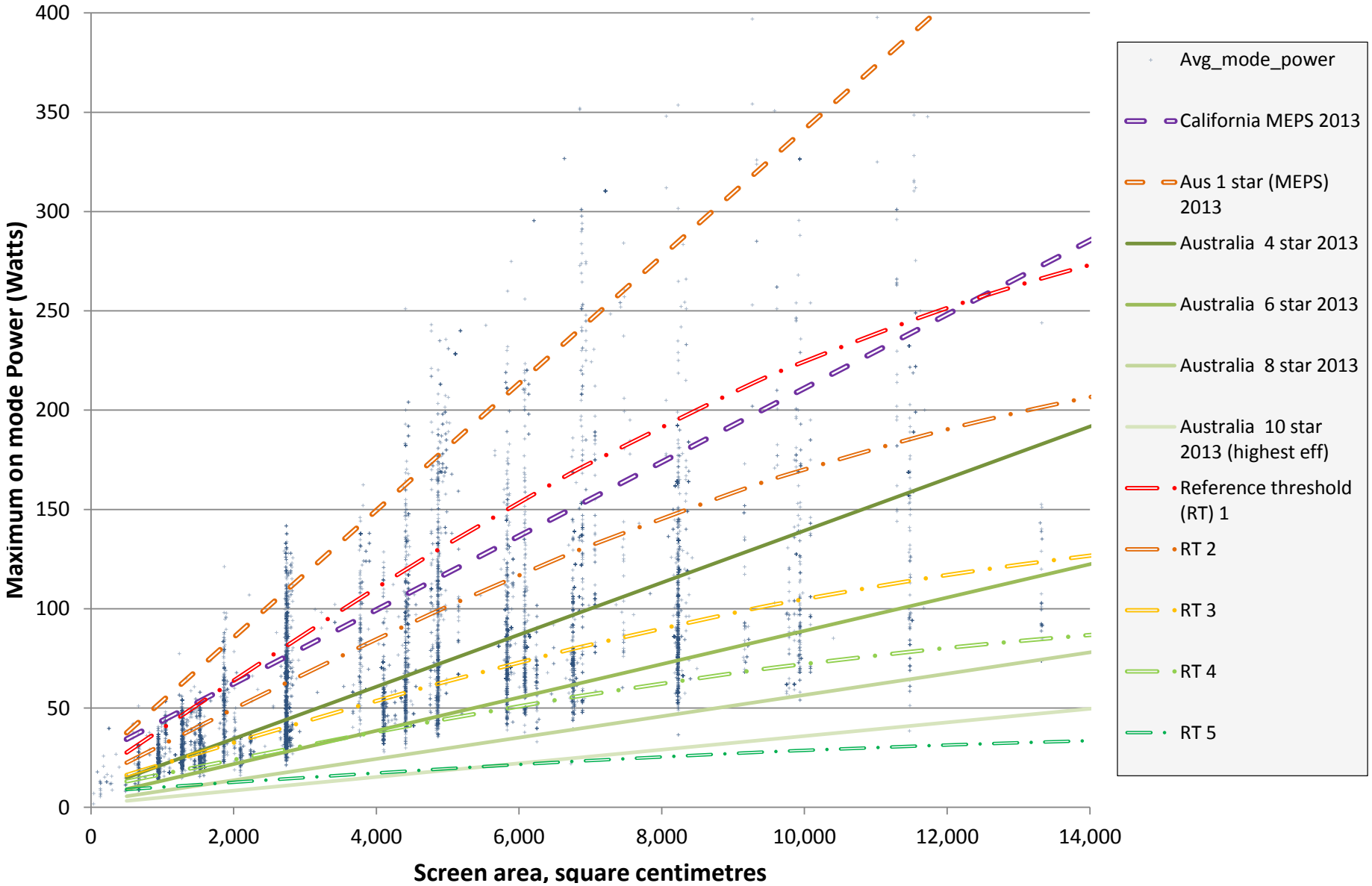
Proposed performance levels

Efficiency metric formula can be easily manipulated to fit data

- More fairly classifies TVs across different screen sizes
- MEPS cut off least efficient, particularly at most popular screen sizes
- More even distribution across levels
- Aspirational high efficiency threshold


Maximum on mode Power (Watts)
400
350
300
250
200
150
100
50
0
0
2,000
4,000
6,000
8,000
10,000
12,000
14,000
Screen area, square centimetres
Avg_mode_power
California MEPS 2013
Aus 1 star (MEPS) 2013
Australia 4 star 2013
Australia 6 star 2013
Australia 8 star 2013
Australia 10 star 2013 (highest eff)
Reference threshold (RT) 1
RT 2
RT 3
RT 4
RT 5

Summary

- Foundation is realistic test methods
- Need to try to take into account new innovation
- More sophisticated analysis and evaluation can result in more energy savings – easier at global level

Moving towards harmonisation:

- Developing more guidance
- Working with manufacturers to standardise information
- Supporting standards bodies