Greening of Streaming

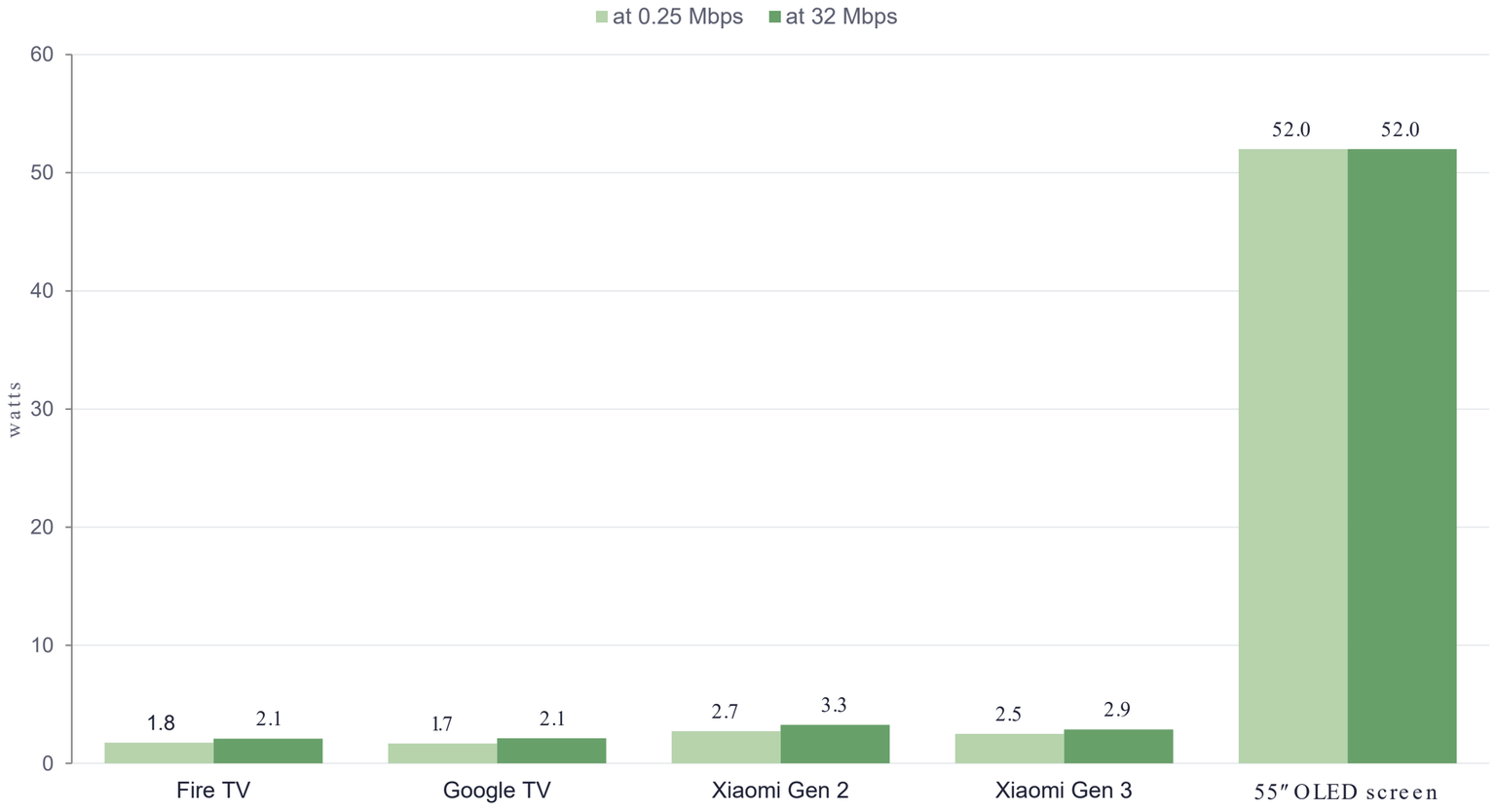
Finding “Enough”

Measuring energy sufficiency before regulating it

Ben Schwarz · President, Greening of Streaming · BEREC external workshop on digital sufficiency

What measurement has taught us

Greening of Streaming



< 0.5 W

Box power change across a 128-fold bitrate range

0.1 W

Spread between four codec generations, same box, same bitrate

~50 W

The screen the boxes were plugged into

What we can measure

Greening of Streaming



Encoder	Origin / data centre	CDN	ISP network	Home gateway	Streaming box	Large screen
METERED	MODELLED Initial measurements	MODELLED	MODELLED	METERED ~10 W · 24/7	METERED Recent: 2–3 W Old: 10+W	METERED ~50 W - 200W

Greening of Streaming

"Enough" does not emerge from the measurement.
Someone has to choose it.

Greening
of Streaming

Sufficiency gives efficiency a finish line that stays still.

Essay “The Cost of Free”: ctoic.net/the-cost-of-free · website: greeningofstreaming.org