

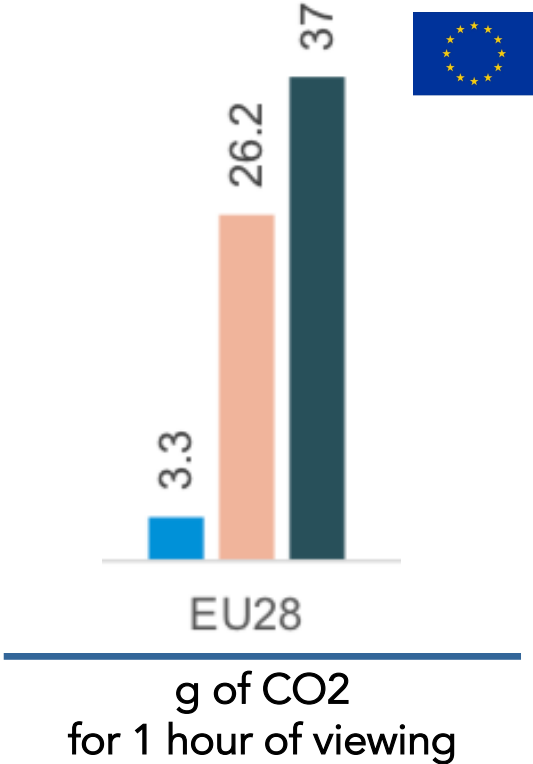
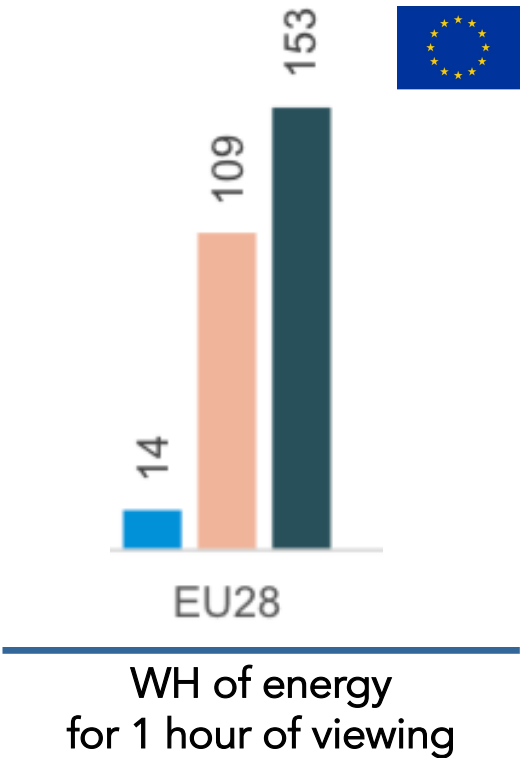
Can you make streaming greener by using Push and Cache over Broadcast?

Sustainability Expert Series – May 9 2023

*Vincent GRIVET
Founder & MD - The LoCaT Project / BMV Consulting*

The LoCaT question :
How **green** is the delivery of TV
content across Europe ?

LoCaT key finding : not all TV delivery methods born equal



■ DTT ■ OTT ■ Managed IPTV

Source : Results for 2020 of LoCaT study

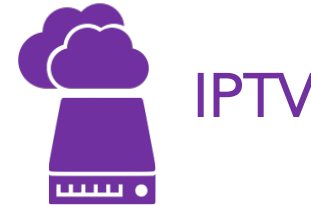
In practice :



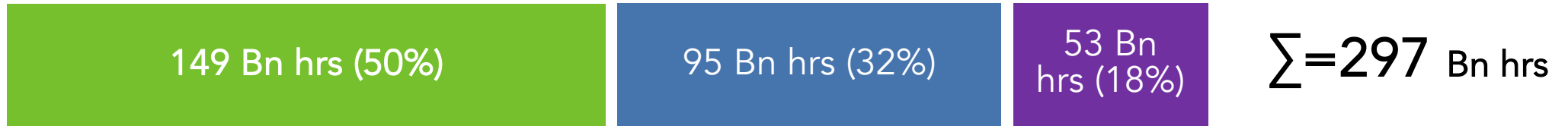
DTT



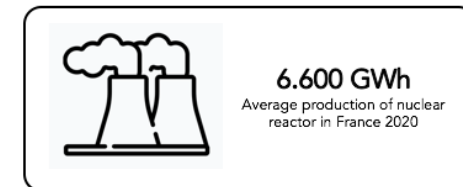
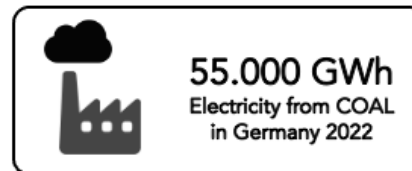
OTT



IPTV



(*) SAT and Cable not part of this calculation
 Source : Results for 2020 of LoCaT study



Energy usage happens at different stages of the transmission chain



Table 4. Breakdown of average energy consumption (Wh) for Europe by component

Component	DTT	OTT	IPTV
Distribution infrastructure (incl. data centres)	8	34	39
In-home network interface (e.g. amplifier, modem)	3	55	88
Viewing peripherals (e.g. STB, streaming devices)	3	20	26
	<u>14 Wh</u>	<u>109 Wh</u>	<u>153 Wh</u>

Source : Results for 2020 of LoCaT study

Focus on Streaming Hours

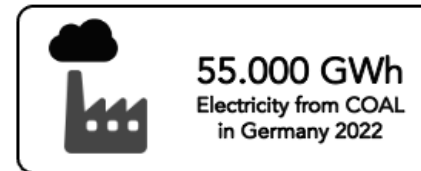
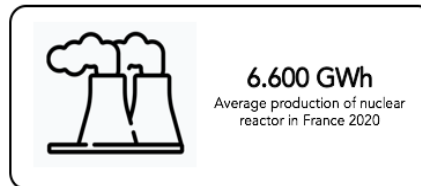


100
Bn Hours

11.000
GWh

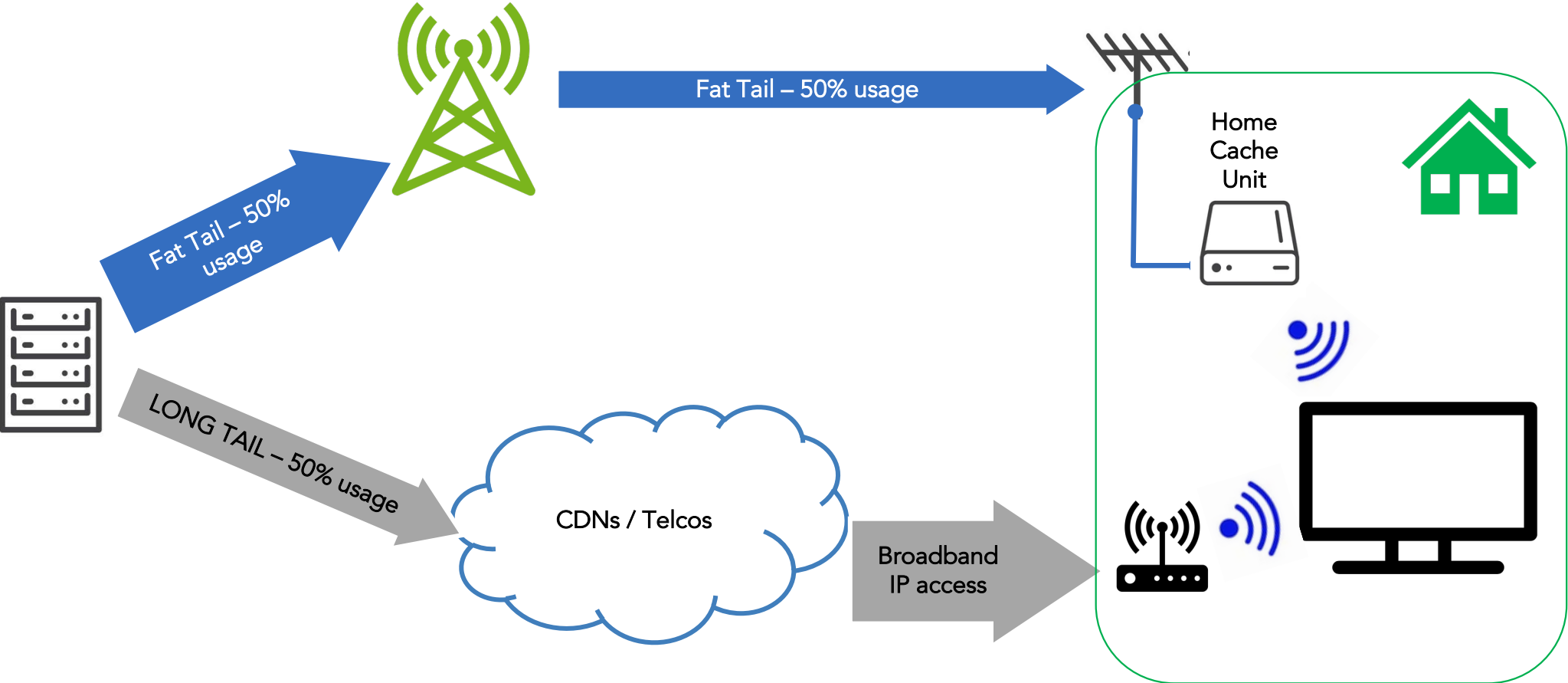
115
Wh / hr

2.720
kTCO2



Source : BMV Simulation based on LoCaT results; assume 90% of OTT and 25% of IPTV is streaming; only viewing on TV screen accounted for !

Home Caching Concept



A significant gain from Home Caching

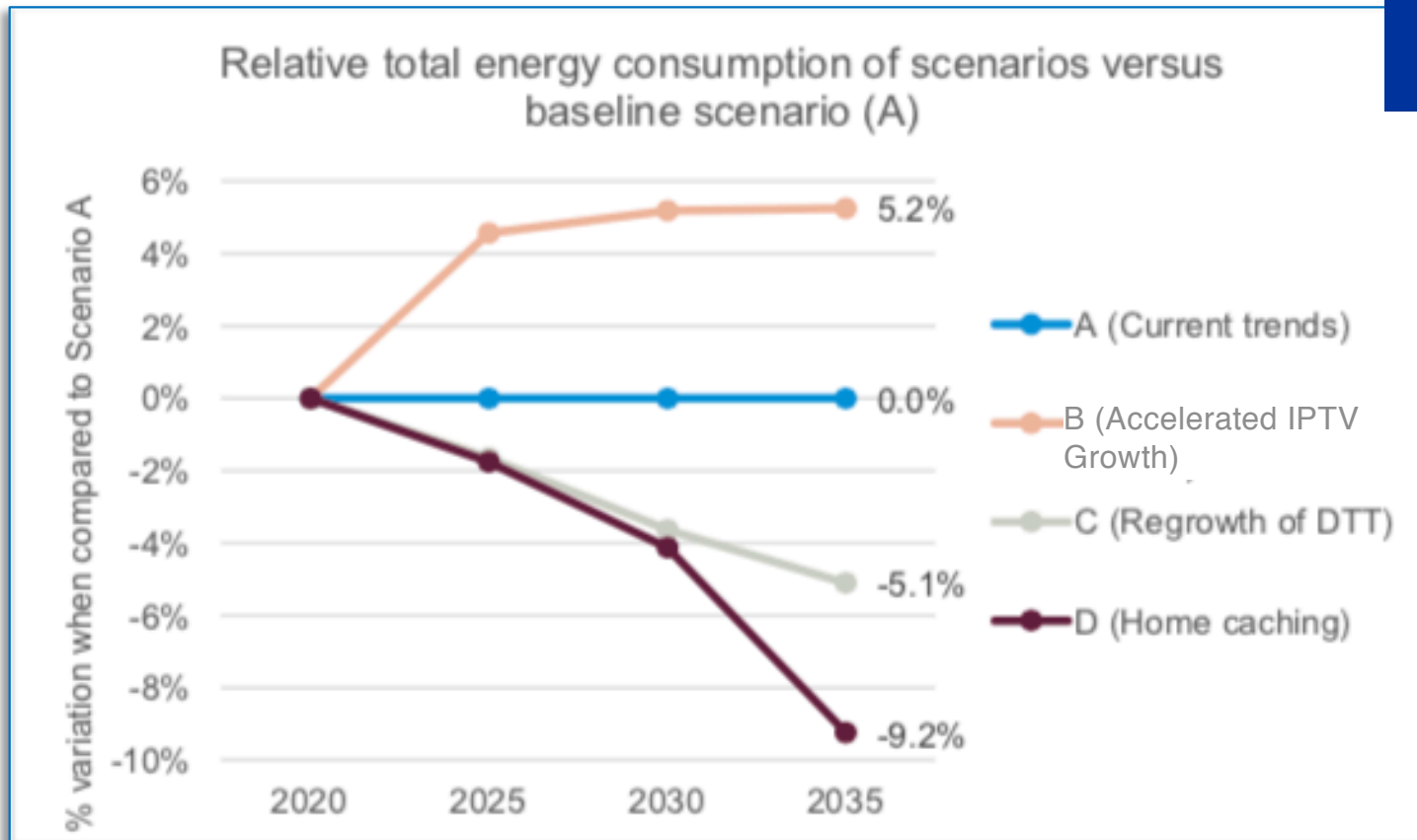
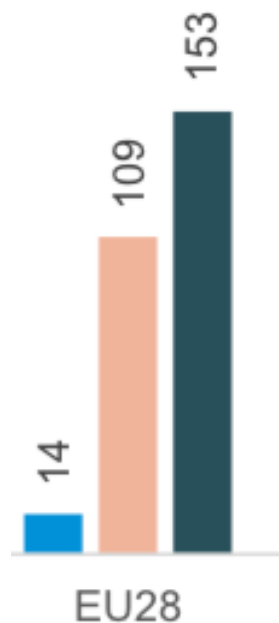
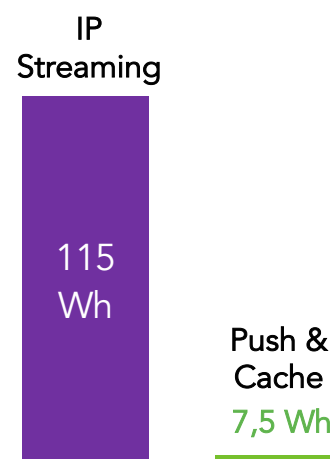


Figure 19. EU28 Comparison of Total Energy Consumption of OTT, IPTV and DTT, when compared to the baseline case where current trends continue

Push & cache savings potential



WH of energy
for 1 hour of viewing



Focus on
streaming hrs

Source : BMV Simulation based on LoCaT results; assume 90% of OTT and 25% of IPTV is streaming; **only viewing on TV screen accounted for !**

Some Conclusions

- Watching TV and especially streaming has a significant energy/carbon cost
- This becomes a significant social, political and business issue
- Issue grows with growth of streaming
- Could (?) be reduced by watching less streaming, or sending less GB , less pixels
- but could be reduced significantly and with no end-user impact by delivering streaming hours through the intrinsically green delivery platform = Broadcast DTT

More news to come !

Catalpa 

The Green Content Delivery Platform