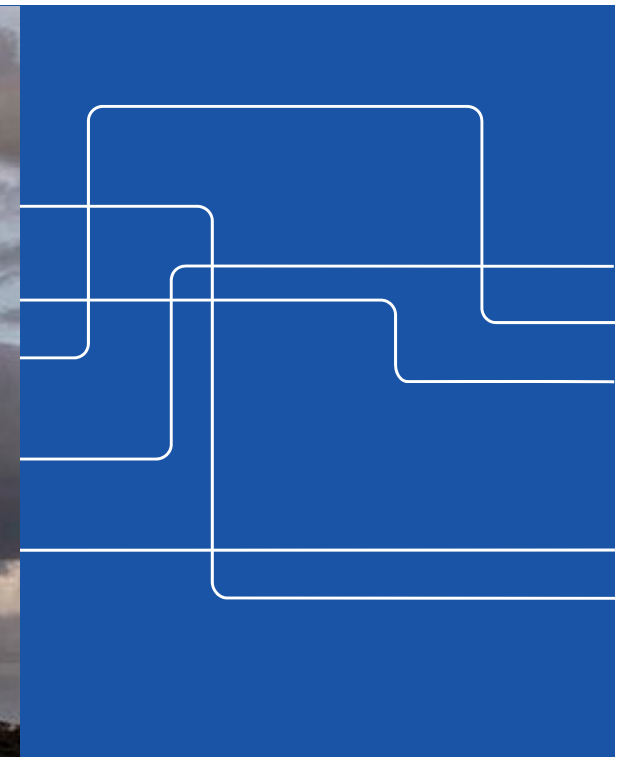




WBG – A New Era

Hans-Peter Nee 2021-03-10



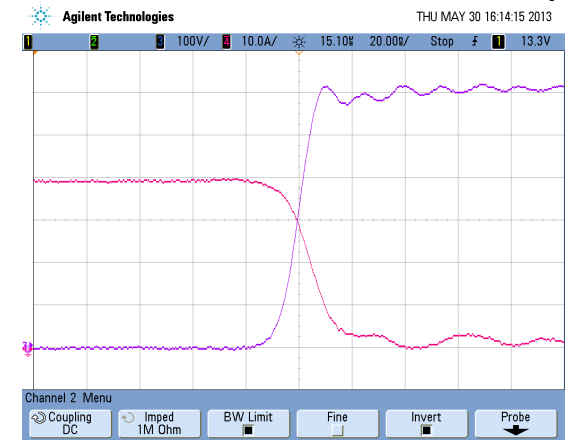
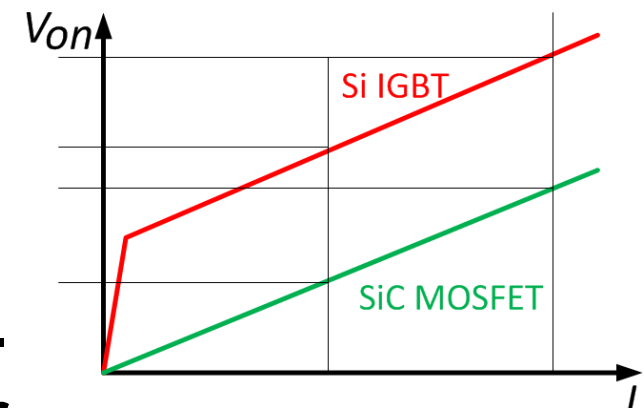
We Must Reduce CO₂ Emissions!

- Electrification is an essential concept for the energy transition.
- Power Electronics is a key enabler for electrification.

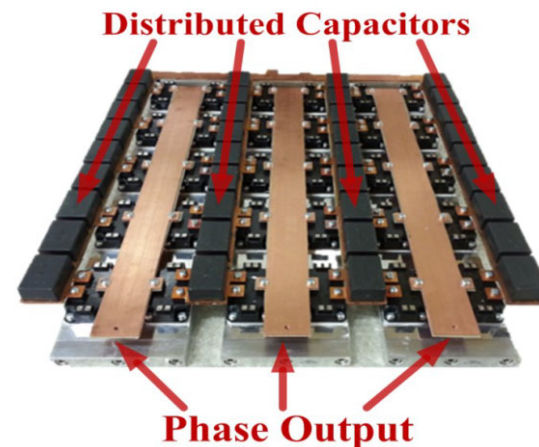
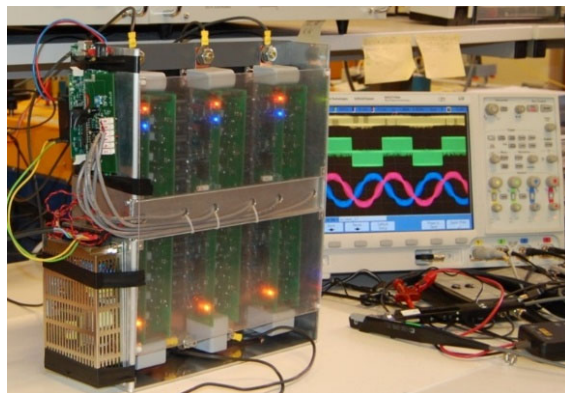


WBG Power Electronics

- WBG Power Electronics is efficient.
- WBG Power Electronics has higher performance than Si technology
- Can be successful in cases where Si technology isn't.
- This can stimulate electrification.



Source: Toyota



ISICPEAW2014

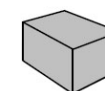
Merits of SiC : Size Reduction

15

Si-PCU



SiC-PCU



Size : ~1/5

	Si-PCU	SiC-PCU
Power Module		Volume reduced to between 1/2 and 1/3 by reducing loss.
Capacitor		Volume reduced to between 1/3 and 1/5 by use of higher frequencies.
Reactor		Volume reduced to between 1/3 and 1/5 by use of higher frequencies.

We Don't Have Much Time!

- How can we speed up the transition to WBG power electronics?
- IEA wants to find the right ways.
- LED lighting is a good example of what can be achieved.
- ..but how can we translate this to WBG power electronics?

