

Energy Cultures

Understanding the factors that influence energy consumption behaviour

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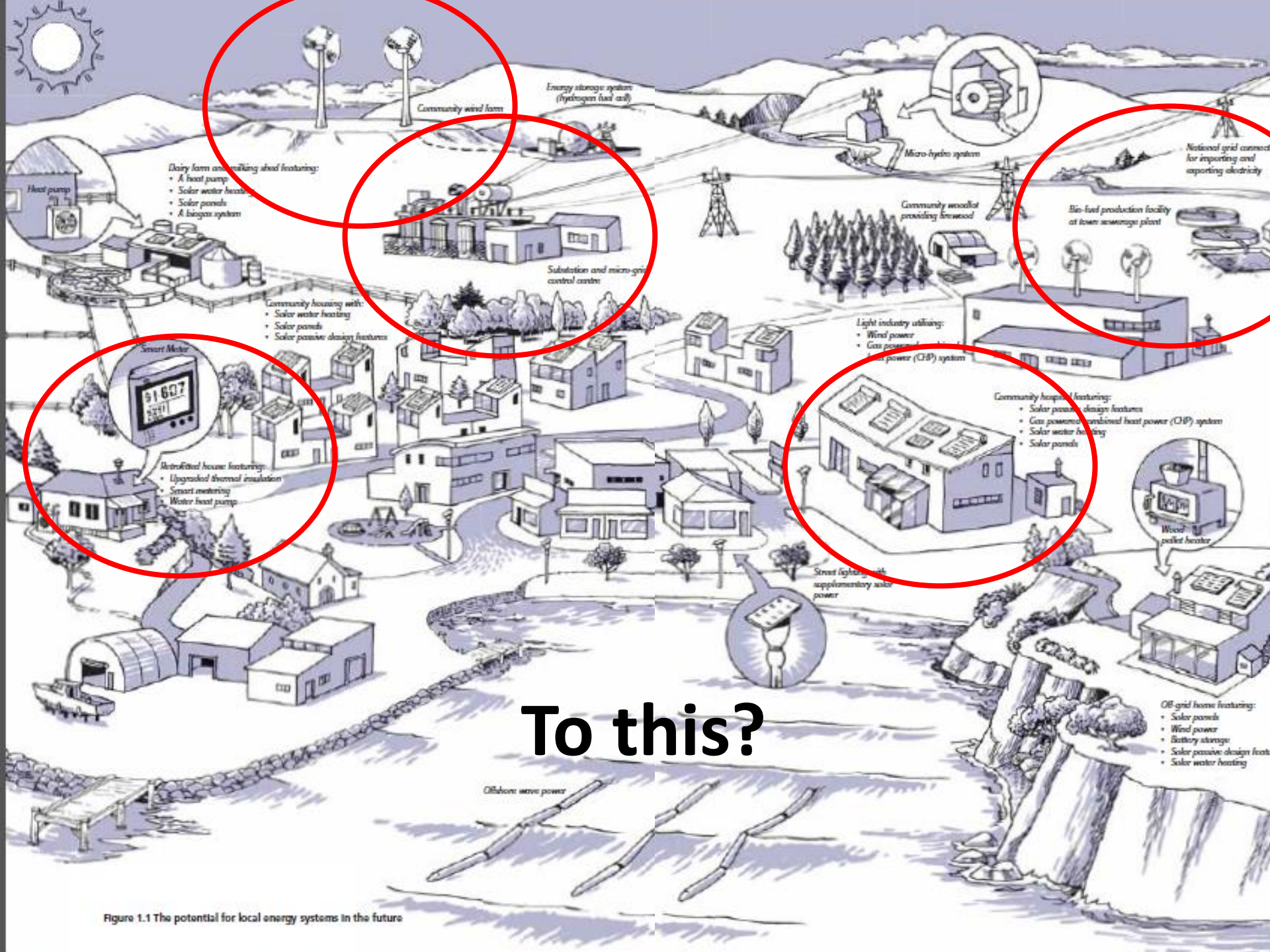
University of Otago, New Zealand

Talk to CEDEC Conference, 19 Nov 2014



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- Dairy farm and milking shed featuring:**
- A heat pump
 - Solar water heating
 - Solar panels
 - A biogas system

- Community housing with:**
- Solar water heating
 - Solar panels
 - Solar passive design features

- Retrofit house featuring:**
- Upgraded thermal insulation
 - Smart metering
 - Water heat pump

- Community hospital featuring:**
- Solar passive design features
 - Gas powered combined heat power (CHP) system
 - Solar water heating
 - Solar panels

- Off-grid house featuring:**
- Solar panels
 - Wind power
 - Battery storage
 - Solar passive design features
 - Solar water heating

To this?

Figure 1.1 The potential for local energy systems in the future

The Energy Cultures team

Dr Paul
Thorsnes
economics

Dr Janet Stephenson
**sociology/
human geography**

Prof. Rob
Lawson
**consumer
psychology**

Prof. Barry
Barton
law & policy



Dr Debbie
Hopkins
**environmental
sociology**

Dr Ben
Wooliscroft
macro-marketing



Jane Khan,
administrator



Dr Michelle Scott
psychology, HCI



Prof. Gerry
Carrington
**physics/
engineering**



Dr John
Williams
marketing



Dr Sara
Walton
management



Dr Rebecca
Ford
engineering



Dr David
Rees
**system
dynamics**



Alaric McCarthy
**environmental
science**



Dr Charles
Sullivan
**psychology;
statistics**

Transitions involve behaviour change....

...of consumers

...of businesses

...of sectors

...of governments

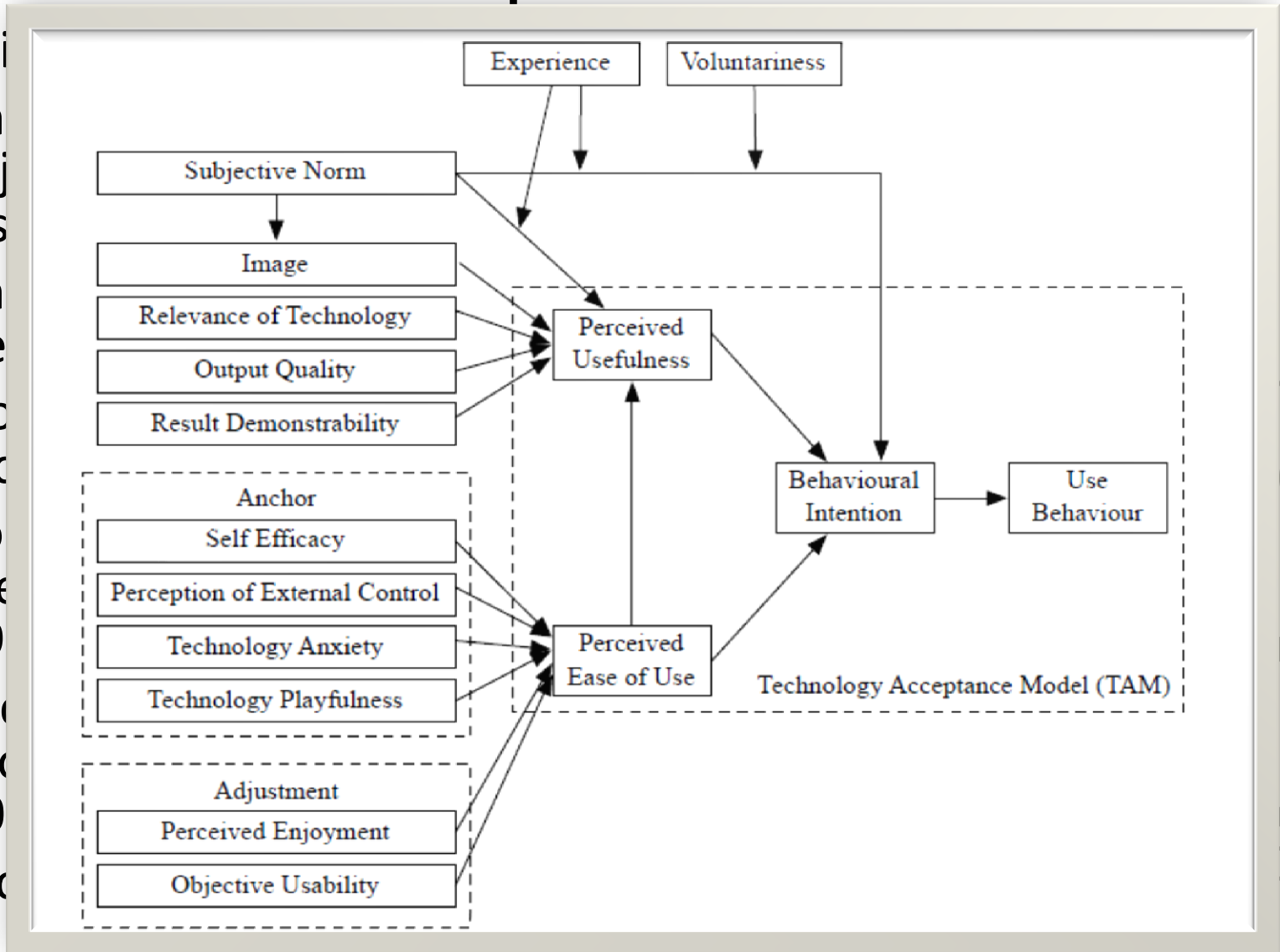
...of global agencies



Understanding behaviour can be complicated!

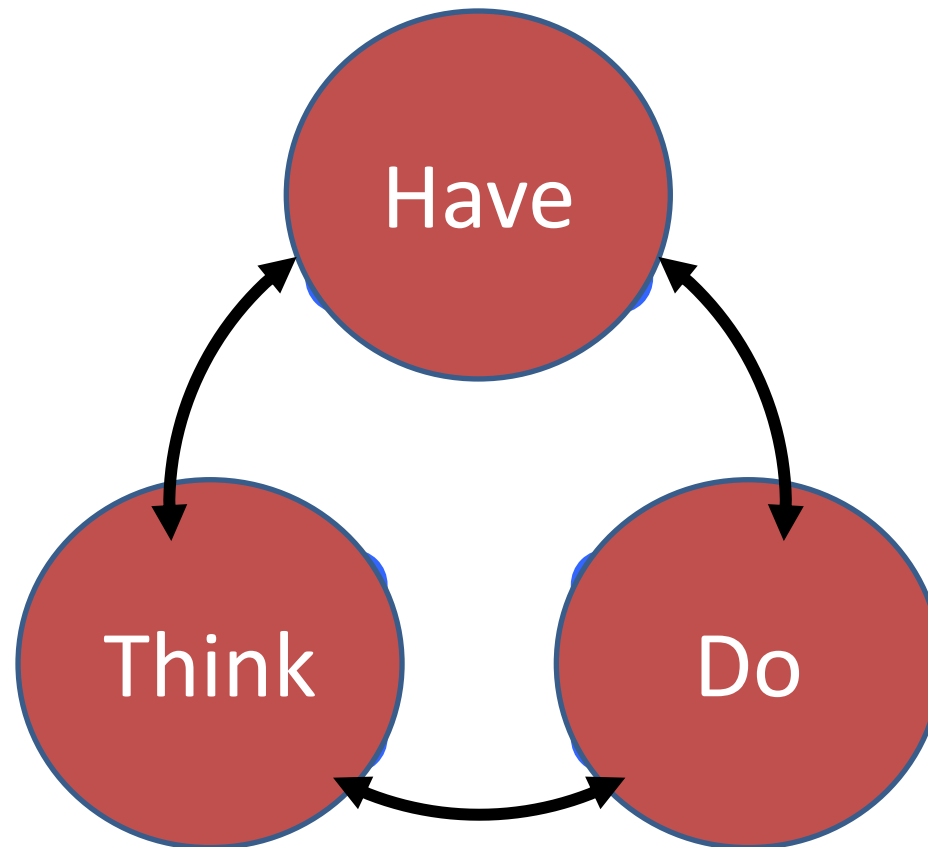
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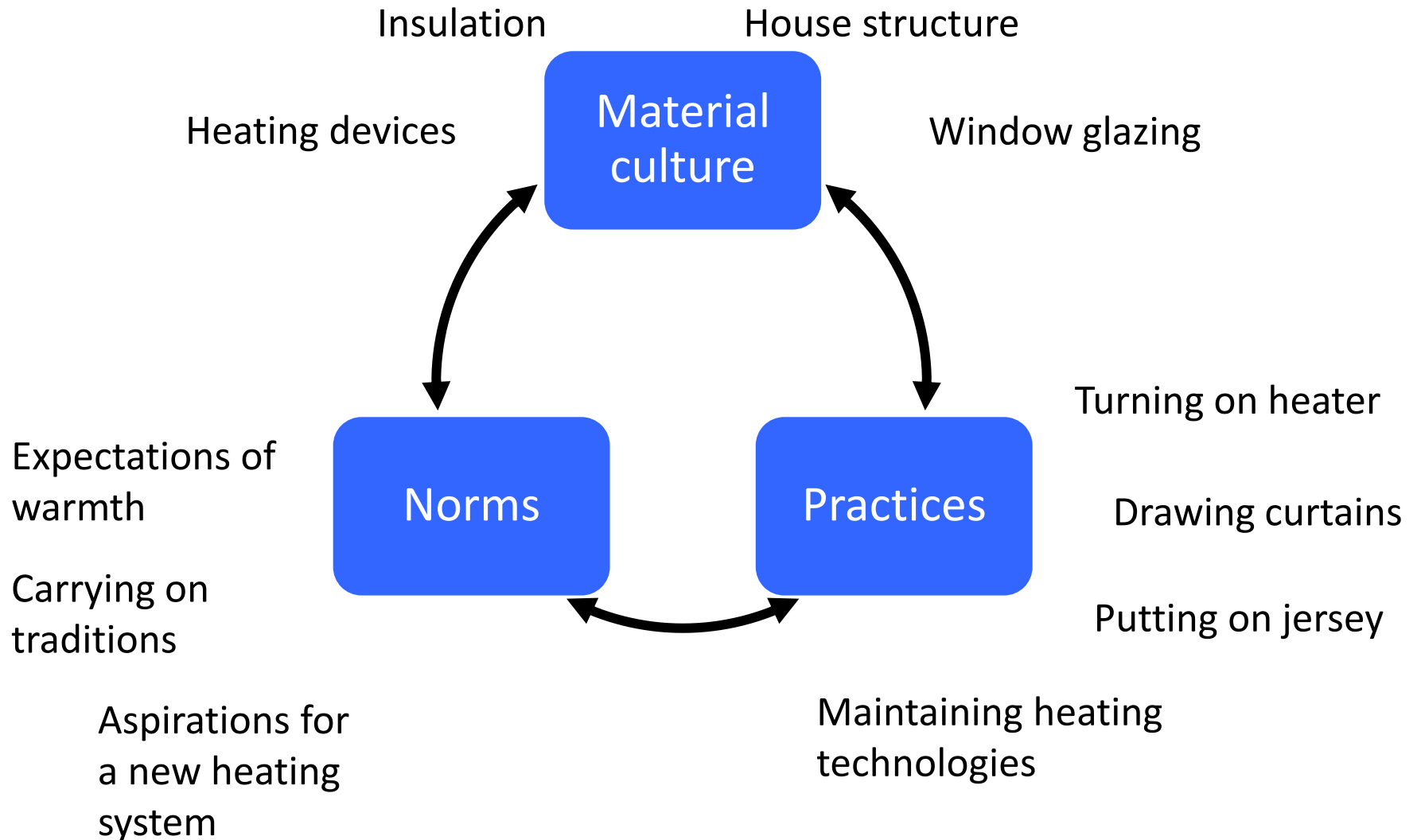


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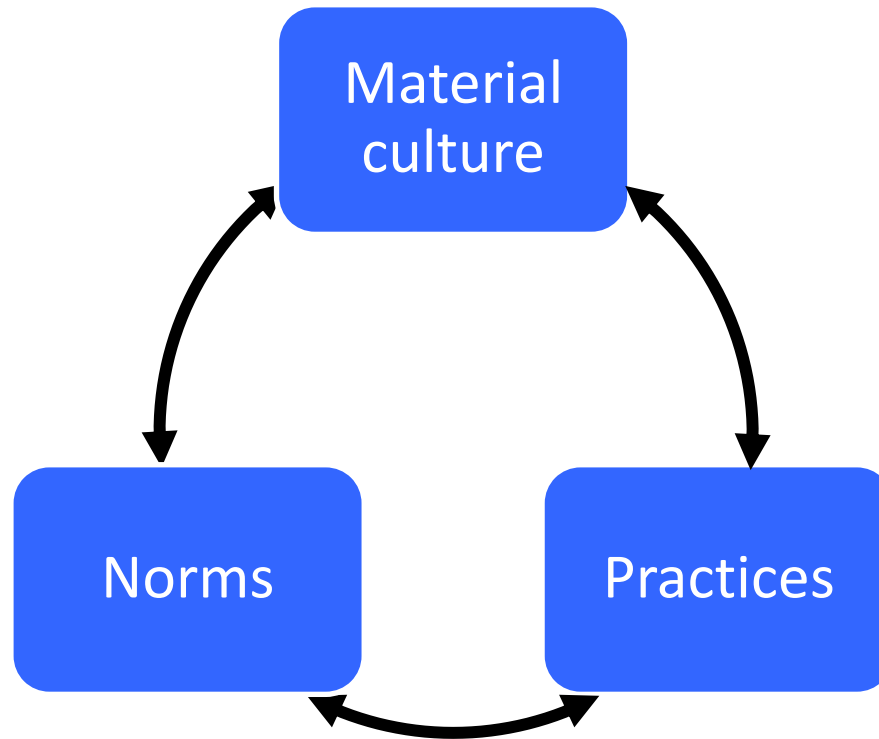
“Energy culture”



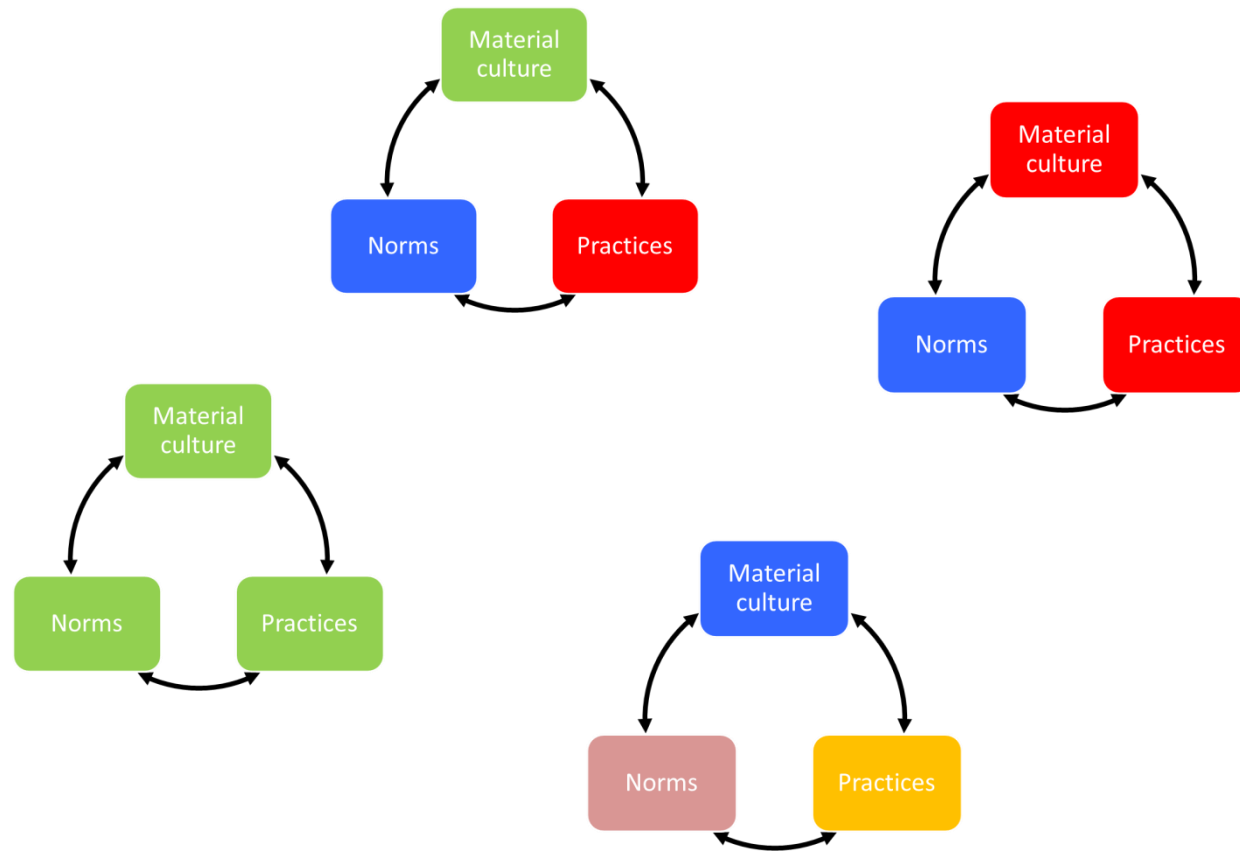
Example: heating culture of a household



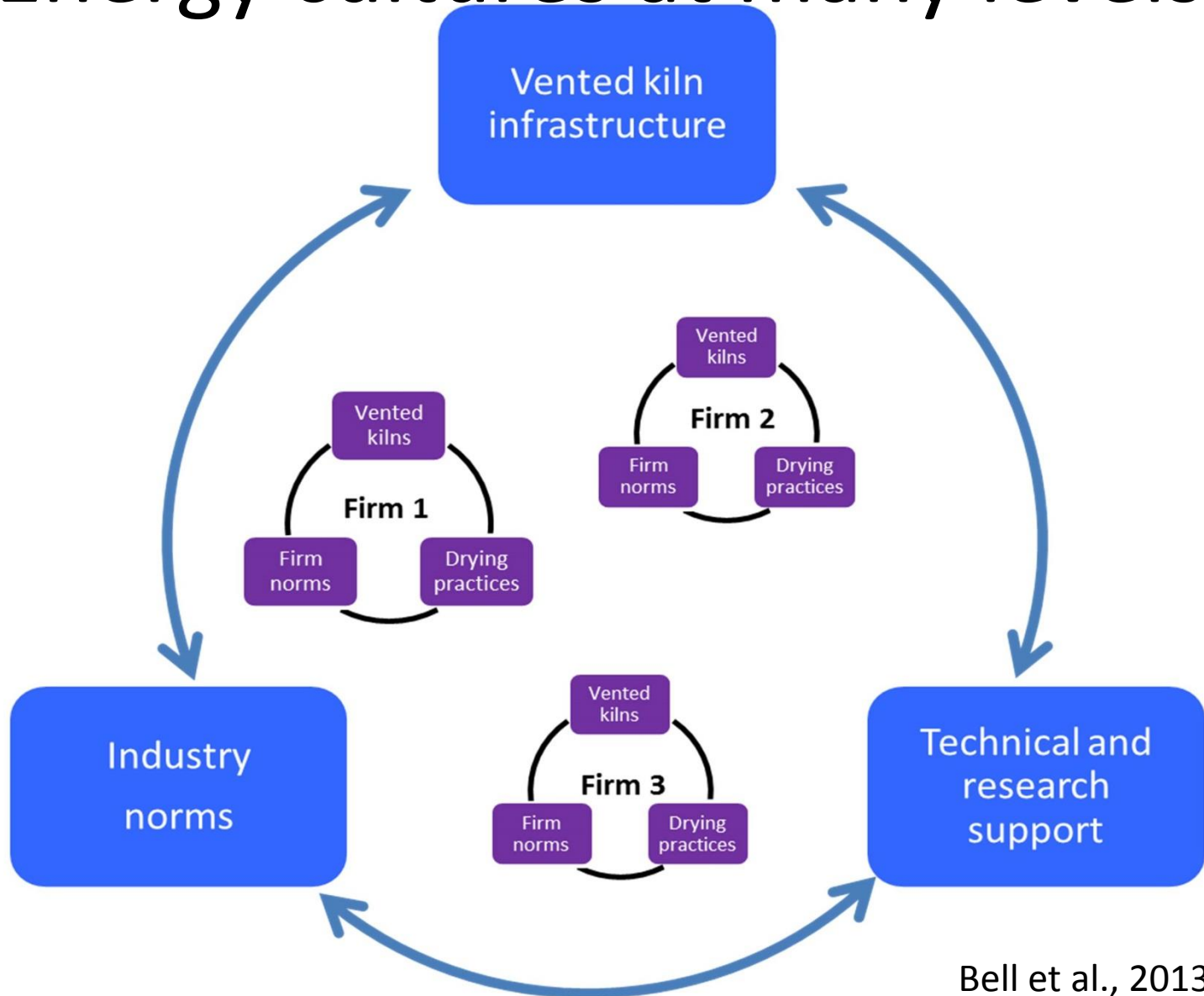
Feedback loops → habits



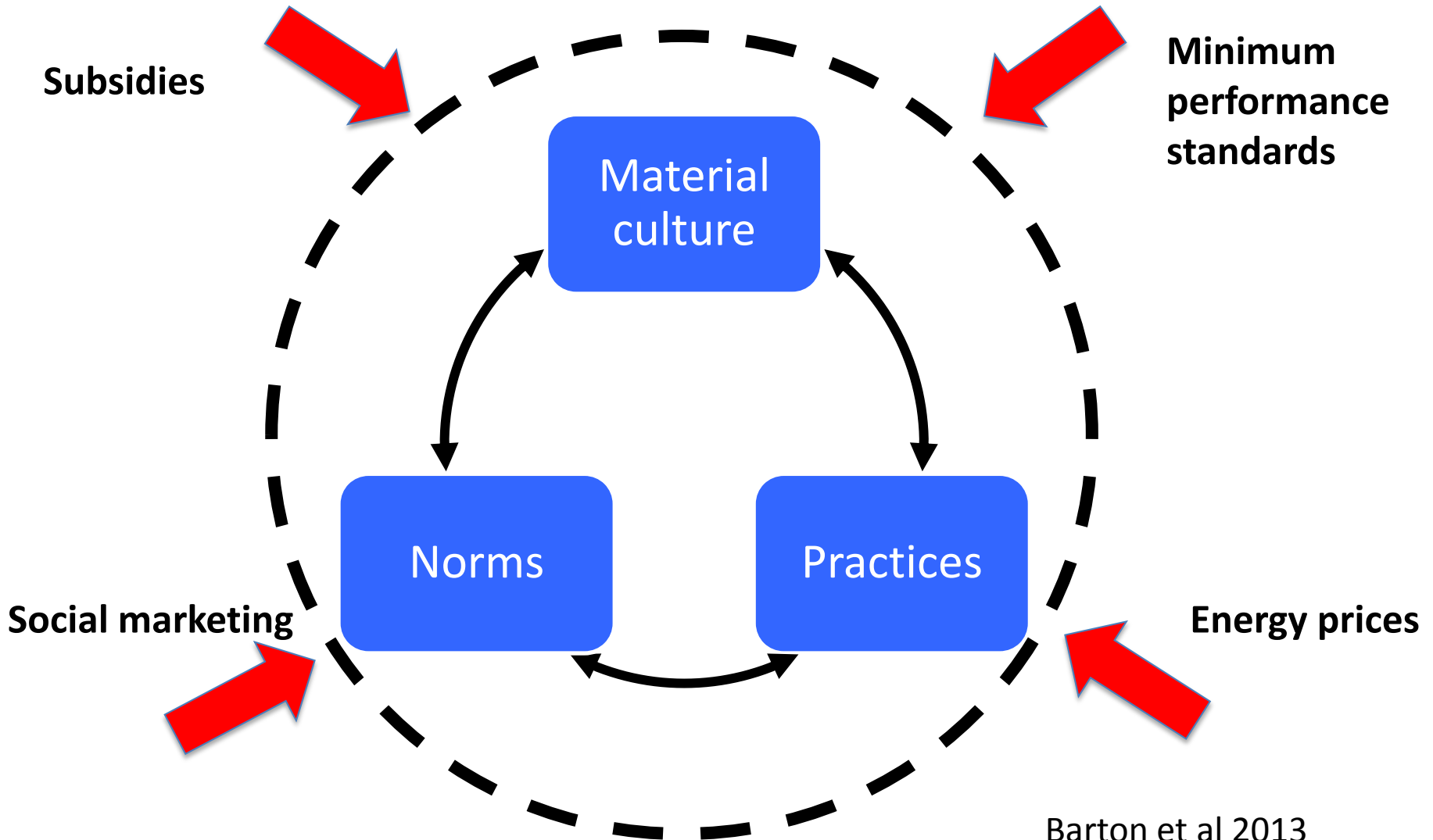
Distinctive clusters of energy cultures amongst households



Energy cultures at many levels

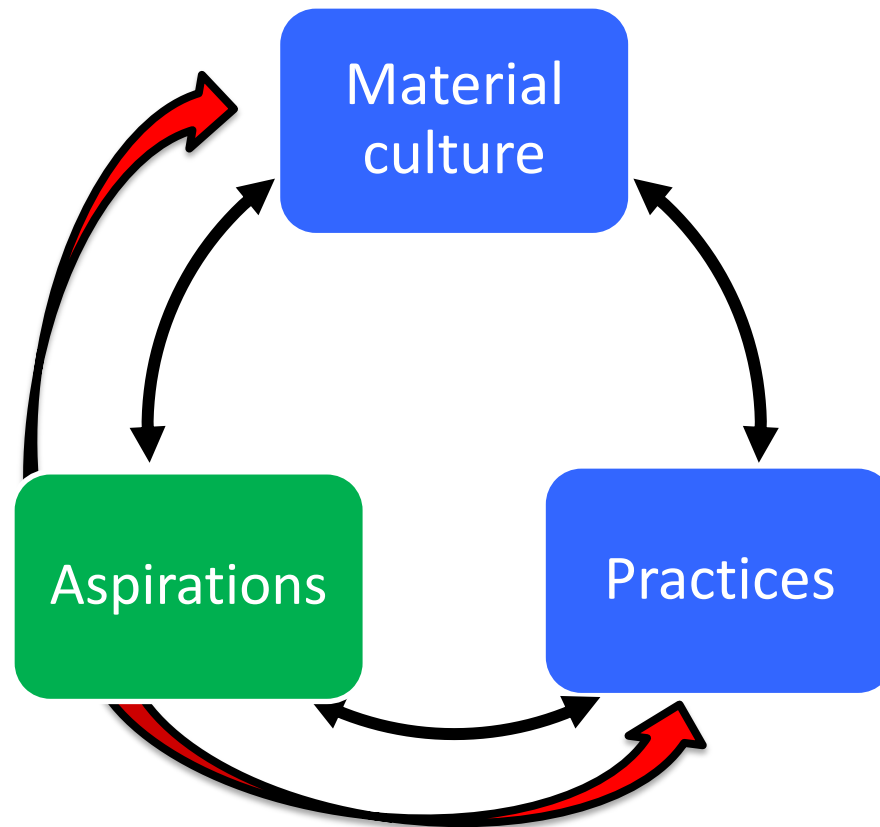


External influences can reinforce habits - or drive change

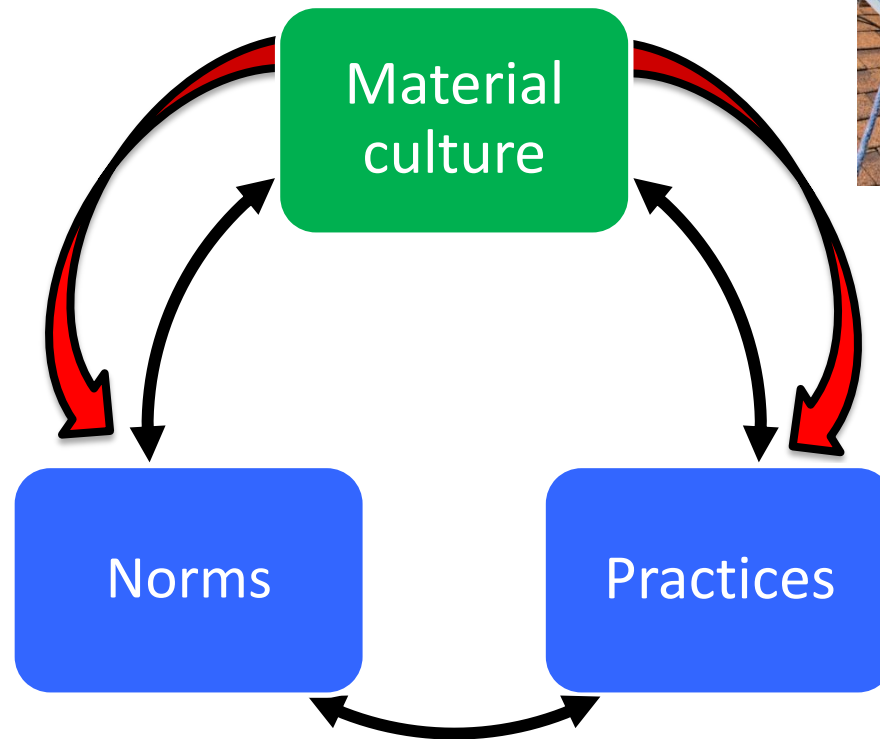


CHANGING ENERGY CULTURES

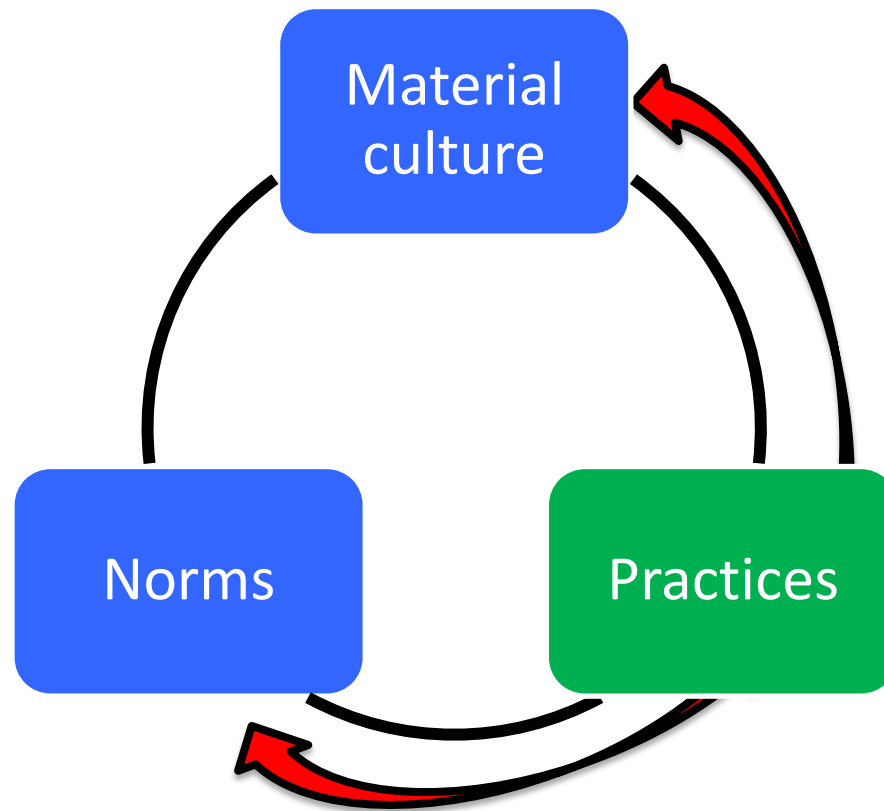
Internal influences on change: new aspirations



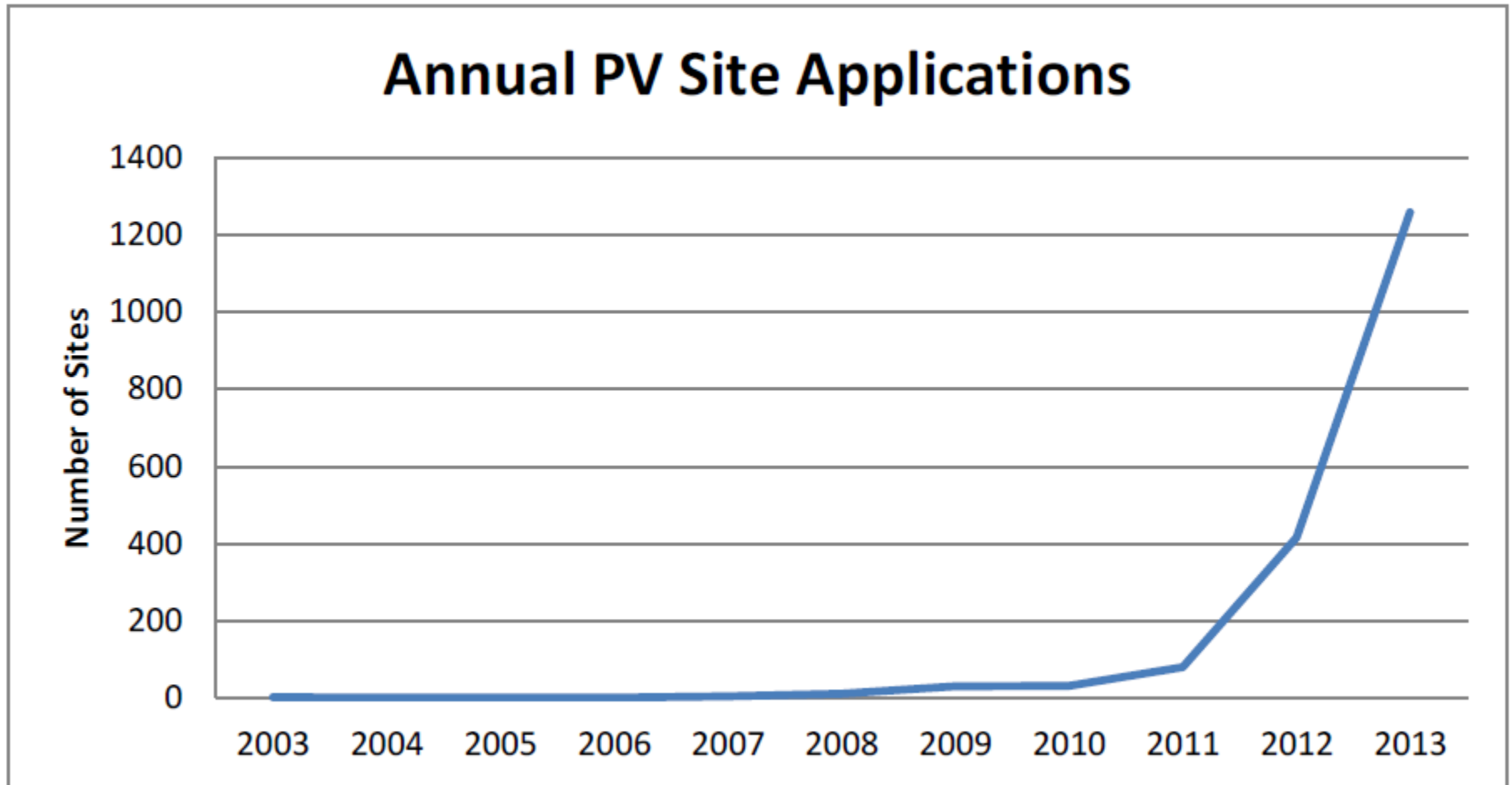
Internal influences on change: new material culture



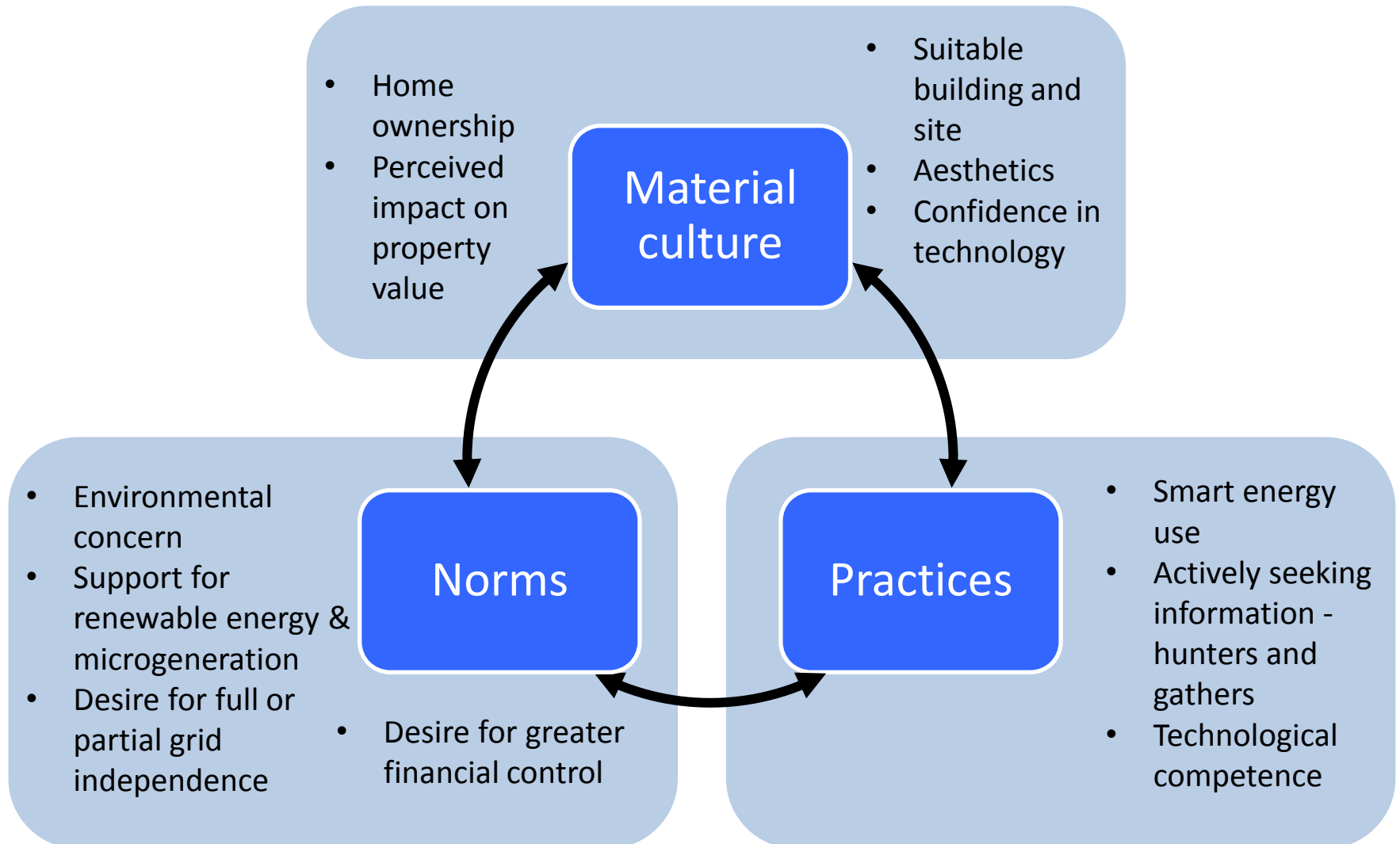
Internal influences on change: new practices

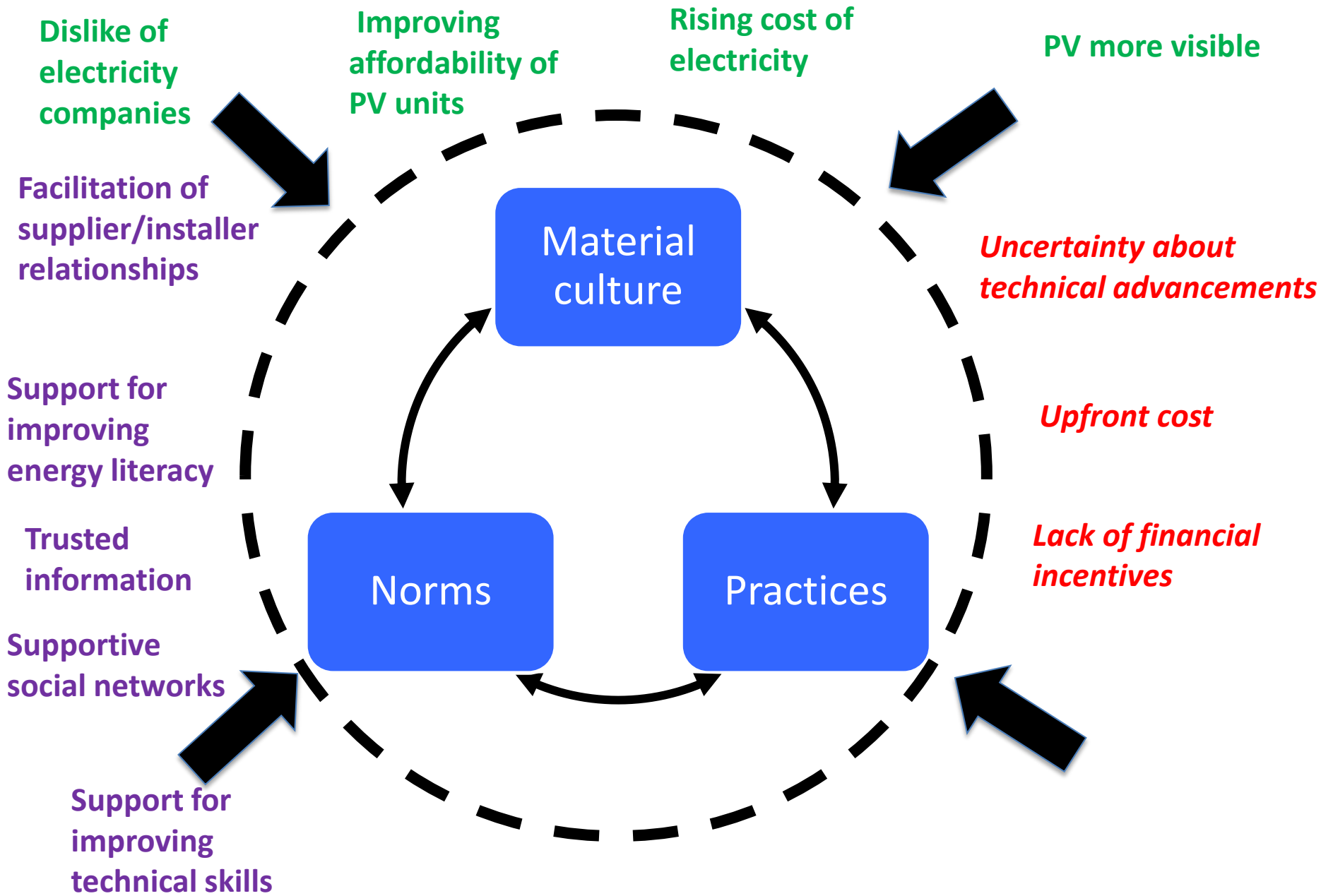


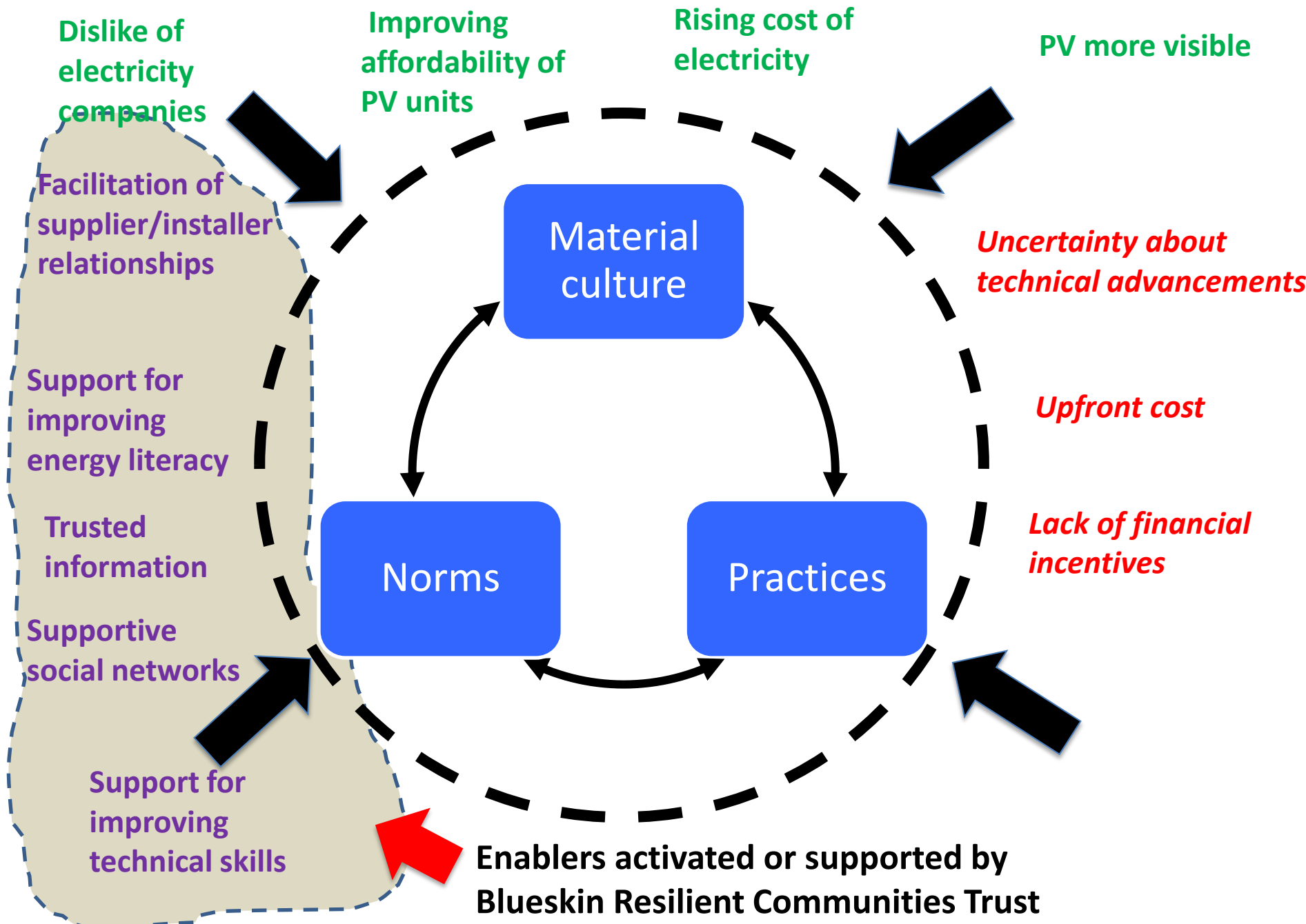
Example – PV uptake in NZ



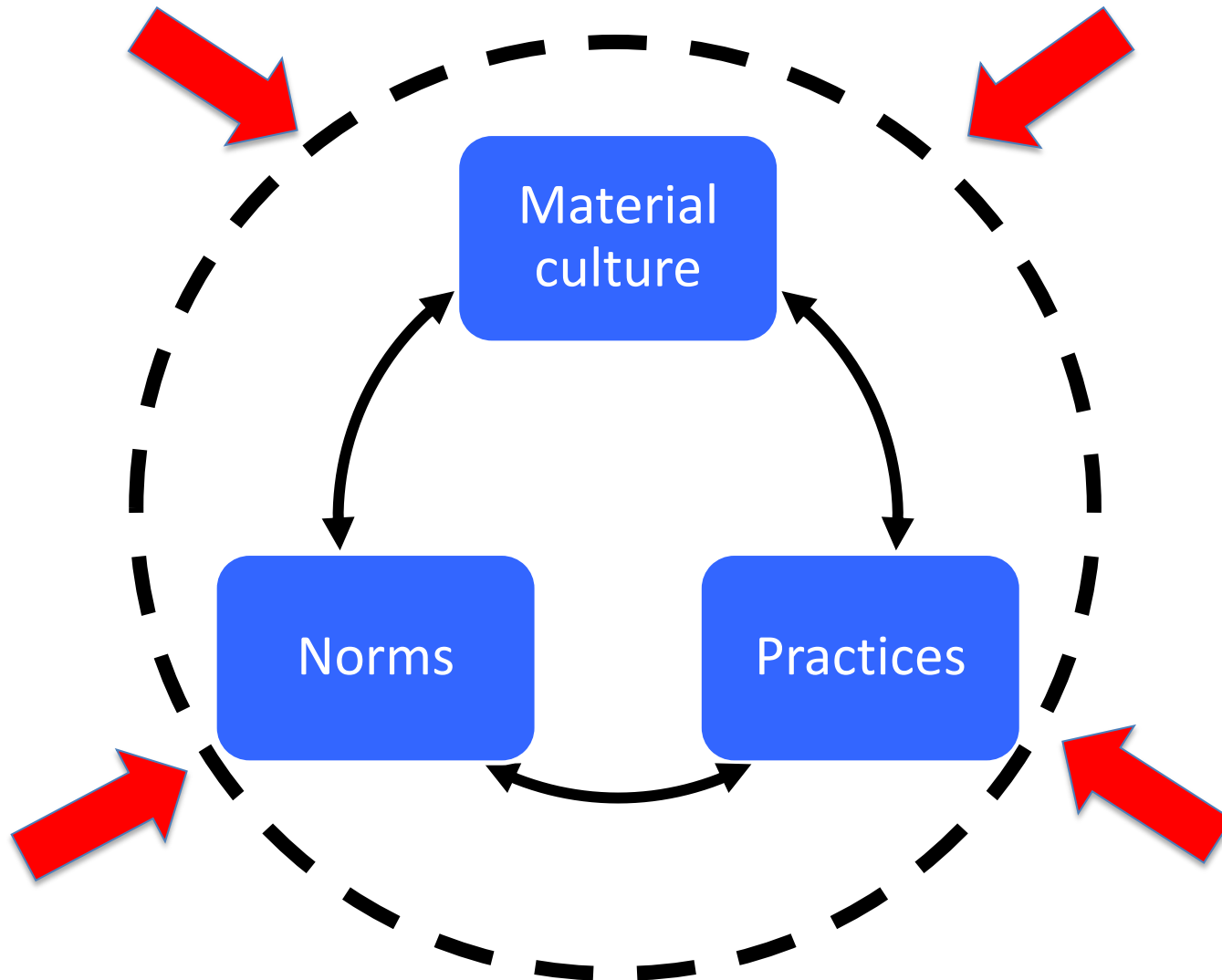
The 'energy culture' of adopters of PV



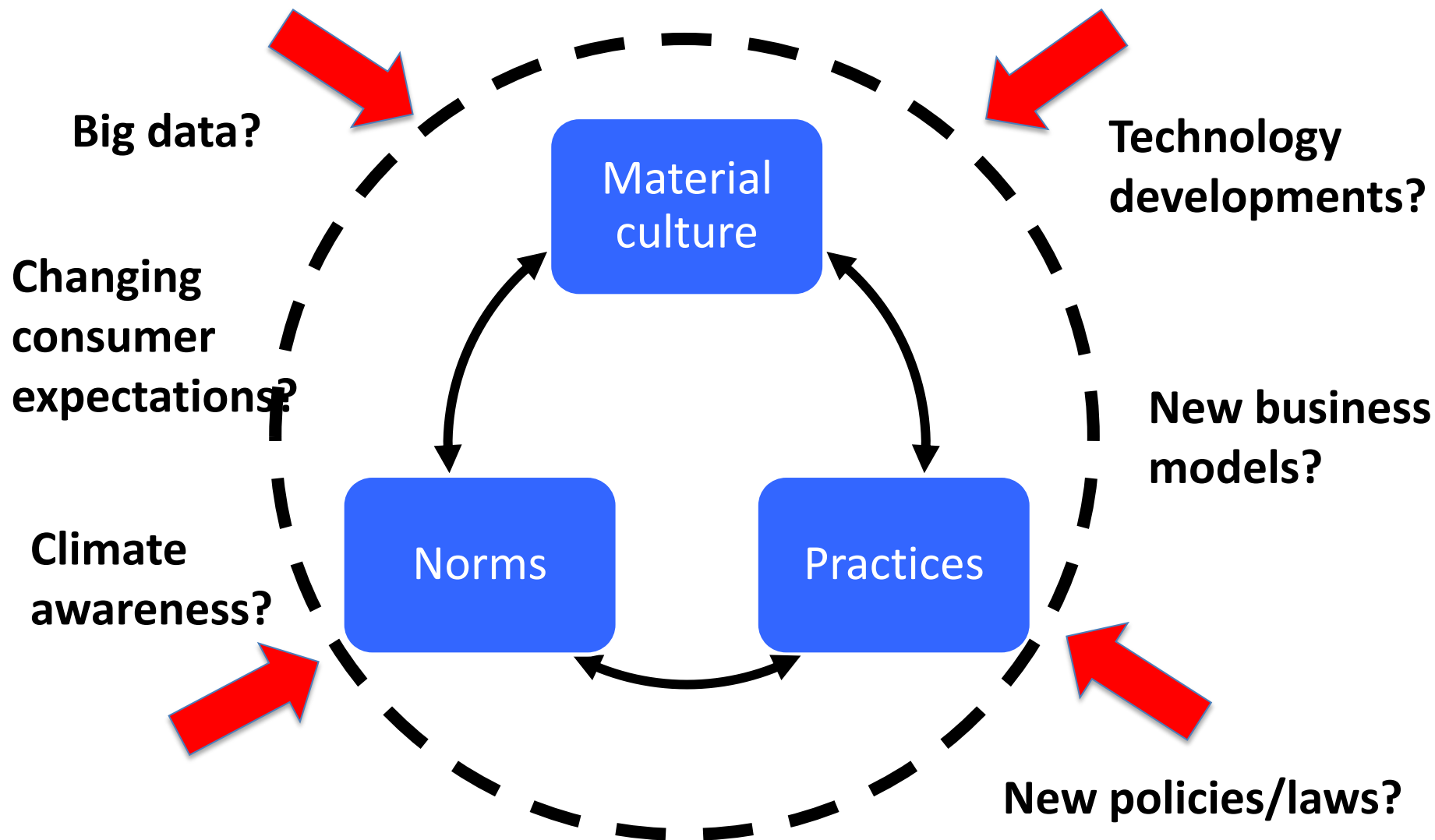




External influences
can reinforce habit - or drive change



External influences creating change in 'energy cultures' of electricity sector?



Further reading:

- Stephenson, J., Barton, B., Carrington, G., Gnoth, D., Lawson, R., & Thorsnes, P. (2010a) Energy Cultures: A framework for understanding energy behaviours. *Energy Policy*, 38: 6120–6129.
- Stephenson, J., Lawson, R., Carrington, G., Barton, B., Thorsnes, P., & Miroso, M. (2010b). The practice of interdisciplinarity. *International Journal of Interdisciplinary Social Sciences*, 5(7), 271-282.
- Carrington, G., Ford, R., Lawson, R., Stephenson, J., Thorsnes, P., Williams, J. (2013) Energy Cultures: Implications for Policymakers. Research Report, Centre for Sustainability, University of Otago, Dunedin, New Zealand. ISBN: 978-0-473-23717-2
- Bell, M., G. Carrington, R. Lawson, J. Stephenson (2014). Socio-technical barriers to the use of low-emission timber drying technology in NZ. *Energy Policy* 67: 747–755.
- Ford, R., Doering, A., & Stephenson, J. (2014). Transport Transitions in New Zealand: A scoping study. Report for EECA. Centre for Sustainability, University of Otago, NZ
- Hopkins, D., & Stephenson, J. (2014). Generation Y mobilities through the lens of energy cultures: a preliminary exploration of mobility cultures. *Journal of Transport Geography*, 38, 88-91.
- Stephenson, J., Hopkins, D., Doering, A. (2014). Conceptualizing transport transitions: Energy Cultures as an organizing framework. *WIREs Energy Environ.* doi: 10.1002/wene.149
- King, G., Stephenson, J., & Ford, R. (2014). PV in Blueskin: Drivers, barriers and enablers of uptake of household photovoltaic systems in the Blueskin communities. Centre for Sustainability, University of Otago, Dunedin, NZ.
- Ford, R., Stephenson, J., Scott, M., Williams, J., Wooliscroft, B., King, G., & Miller, A. (2014). PV in New Zealand: The story so far. Centre for Sustainability, University of Otago.



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