

Sharing economy & P2P electricity markets



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I NEED...



EFFICIENCY



TRUST

YOU HAVE...





Sharing economy = I do not need a hammer, I need a nail in the wall



- 31 170 700 private vehicles in UK in 2015 (Department of Transport, 2016)
- About 77% UK households own a car, about 81% have access to a car, about 33% have 2 cars (National Travel Survey Statistics, 2016).
- An average car owner uses her or his car for 9% of the time



UBER





3 drivers behind the Sharing Economy

- **Social**

- Population density
- Sustainable development
- Community and altruism



- **Economic**

- Economic crisis
- Unemployment
- Gig economy and creative economy



- **Technological**

- Global Internet
- Mobile devices and platforms
- Payment (online) systems
- Rise of social networks

PayPaltm

PHASE 1

Communication

YAHOO!



CompuServe

PHASE 2

Web 2.0

Google

PayPal

amazon.com.

ebay

skype

facebook

iTunes

Spotify

PHASE 3

Social Media and the new shared economy

Zilok.com
Rent anything online!

LendingClub

zipcar



airbnb
Travel like a human.

CAR
2GO

HOUSE
TRIP

ARTIFY • IT

Velib'

kodesk
My office is Your office

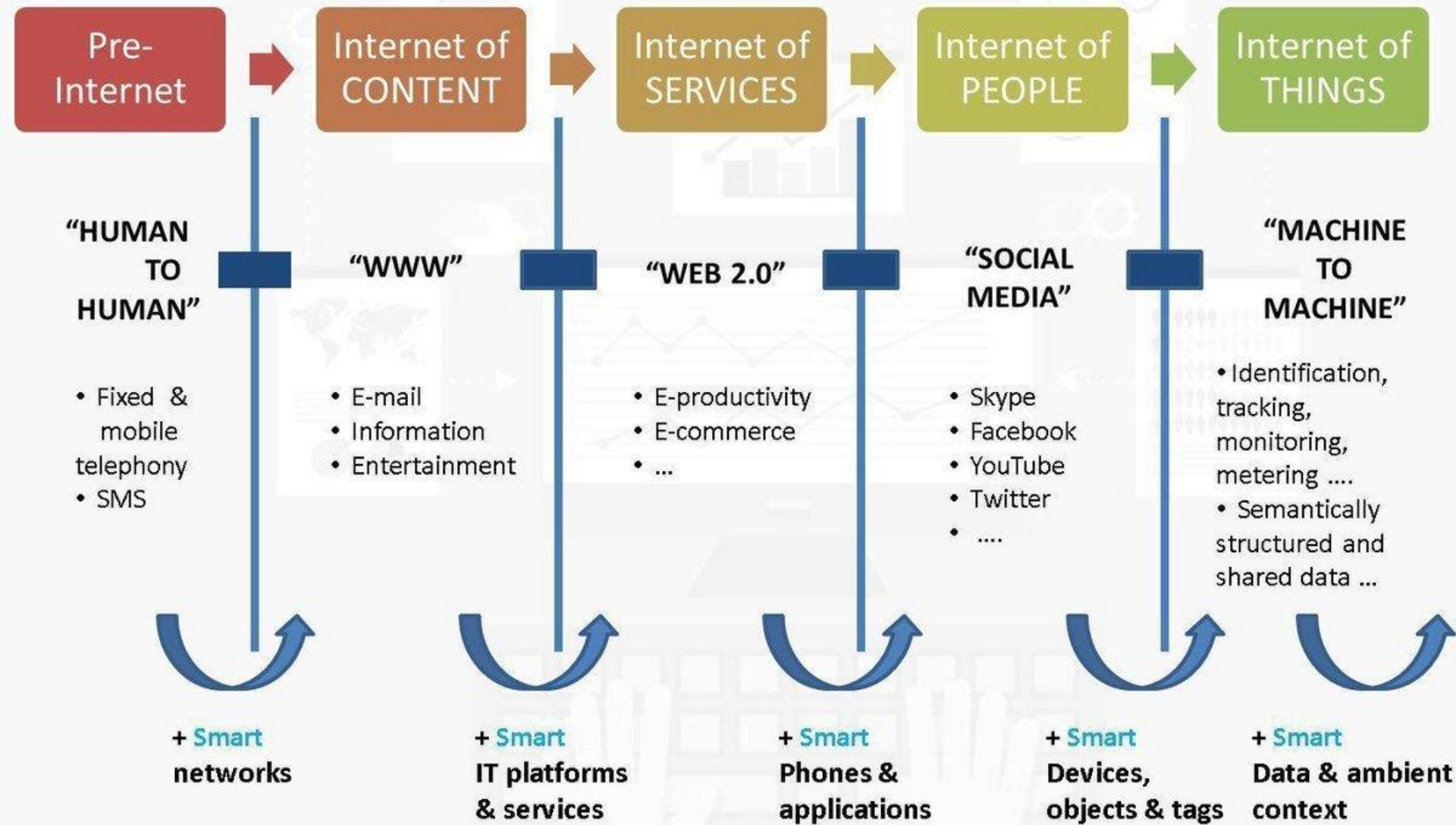
ParkatmyHouse.com



EVOLUTION OF THE CAR MARKET SECTOR

CAR OWNERSHIP	CAR SHARING	RIDE SHARING	P2P CAR RENTAL
			
			
			
			

Evolution of Internet of Things



Gig Economy





59%

PROVIDE
PROFESSIONAL, CREATIVE OR
ADMINISTRATIVE SERVICES



33%

PROVIDE
SKILLED MANUAL OR
PERSONAL SERVICES



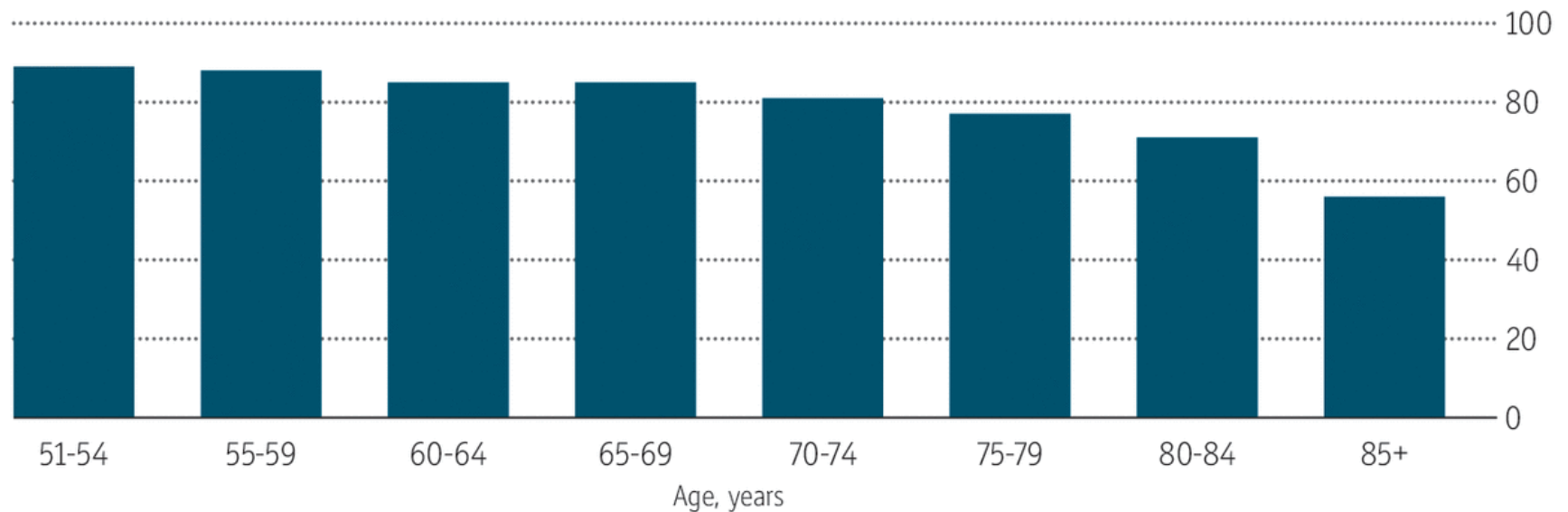
16%

PROVIDE
DRIVING AND
DELIVERY SERVICES

Hale and hearty

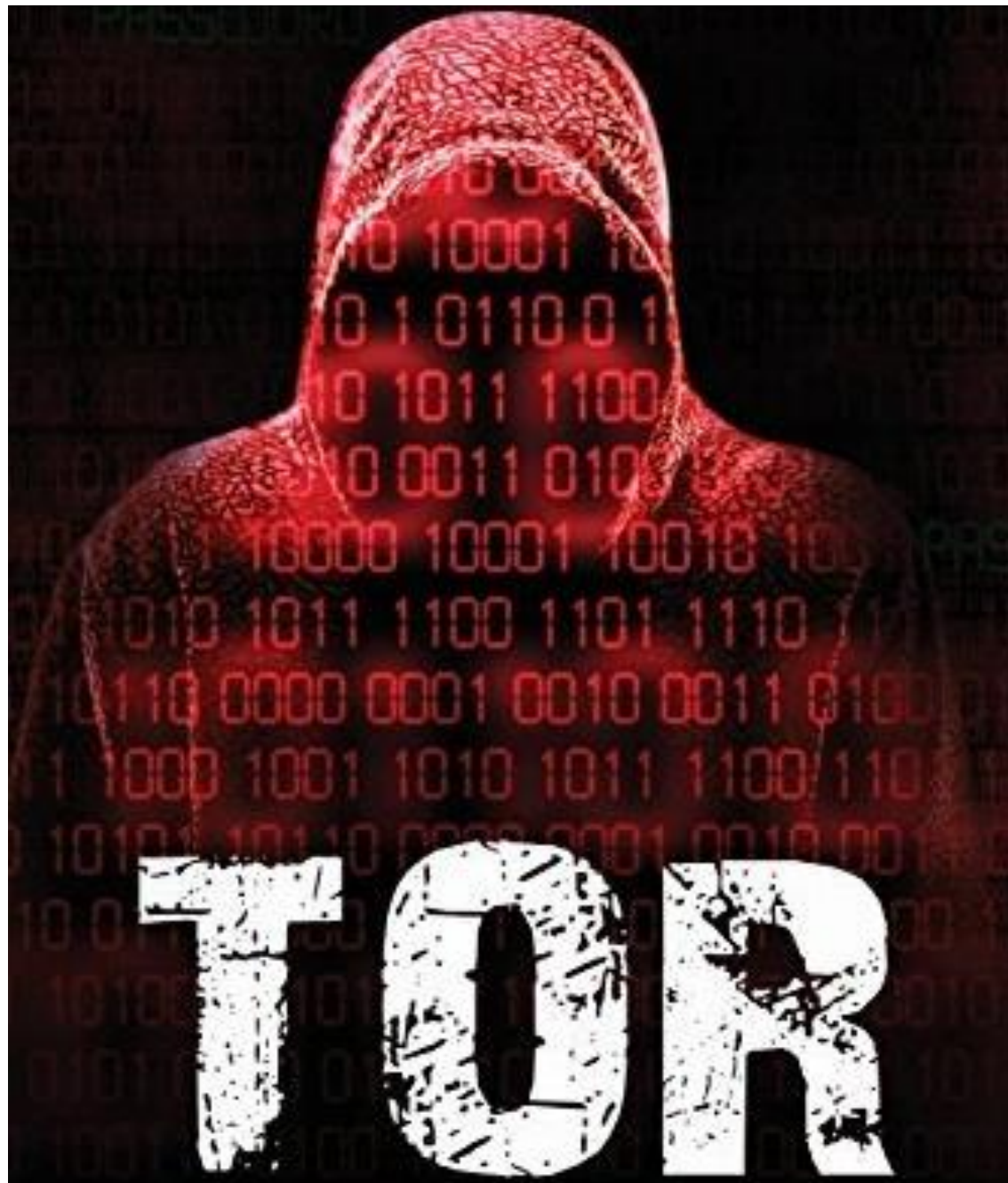
Americans healthy enough to do a job or housework

2013, % of total



Source: "Heterogeneity in Healthy Aging", by D. Lowsky et al, 2013, Journal of Gerontology

Economist.com



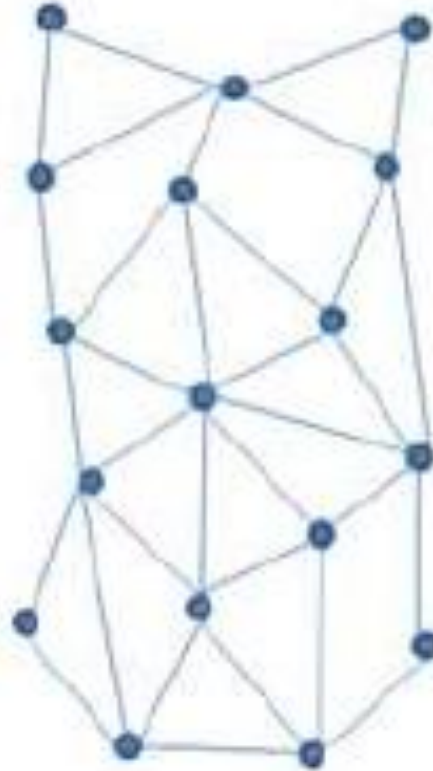




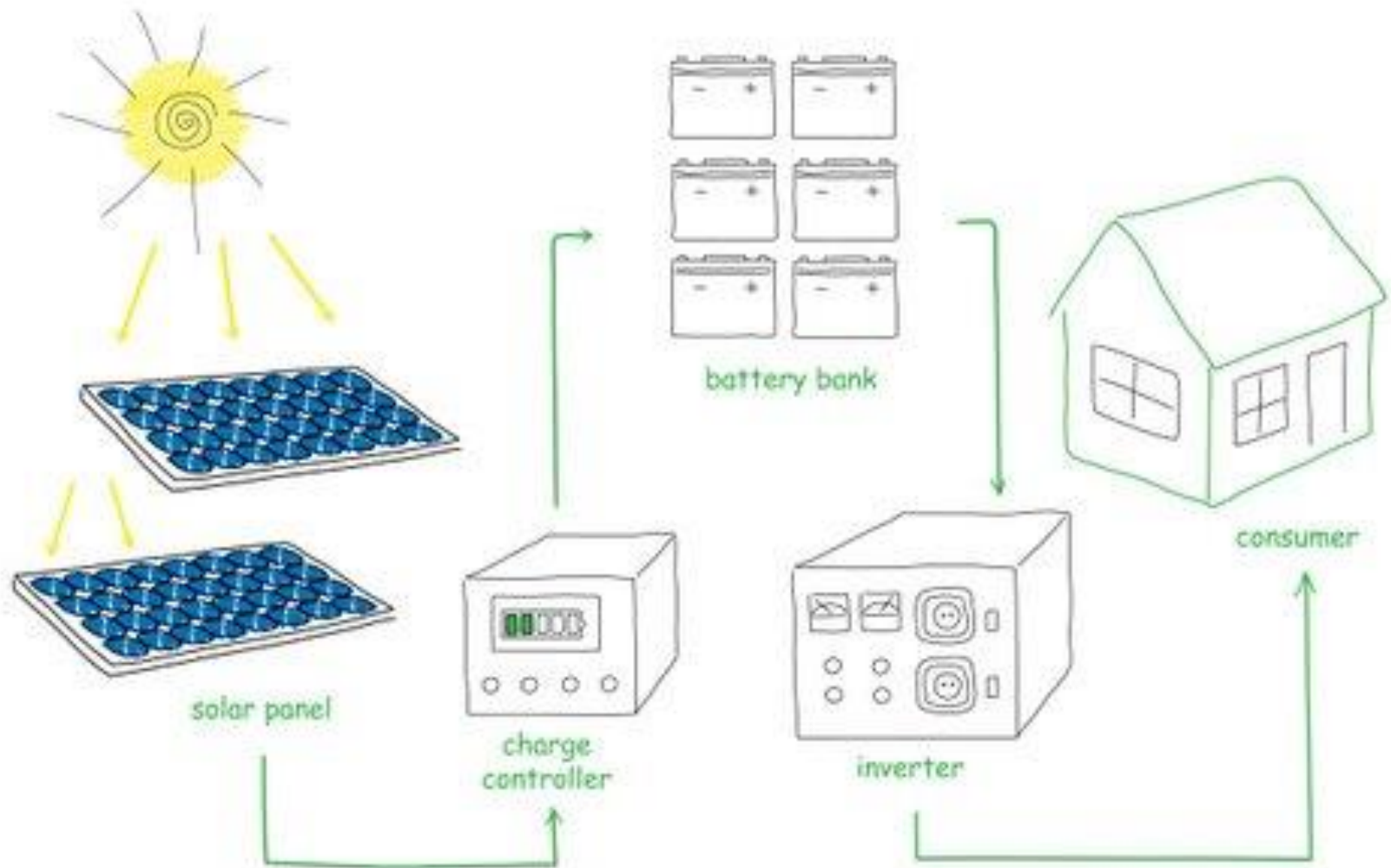
Winklevoss Brothers

Peer-to-peer (P2P) electricity network of prosumers*

Power sector as the new platform for the sharing economy business



*Prosumer = producer + consumer





Vandebron = “from the source”



vandebron.nl

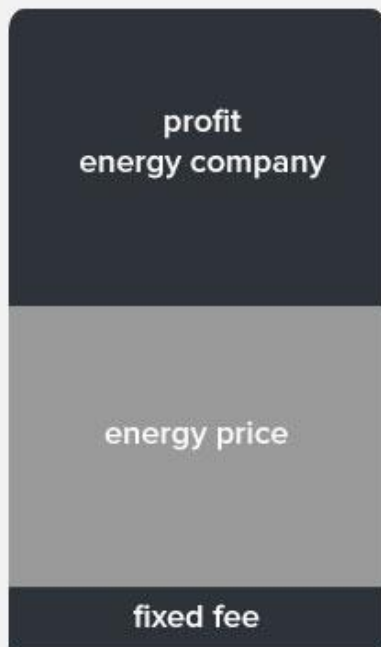
✓ *Veel voordeliger*

✓ *Echt duurzaam*

<https://www.youtube.com/watch?v=7bJcHMsPrI4>

<https://vandebron.nl/>

Price via
Traditional energy company

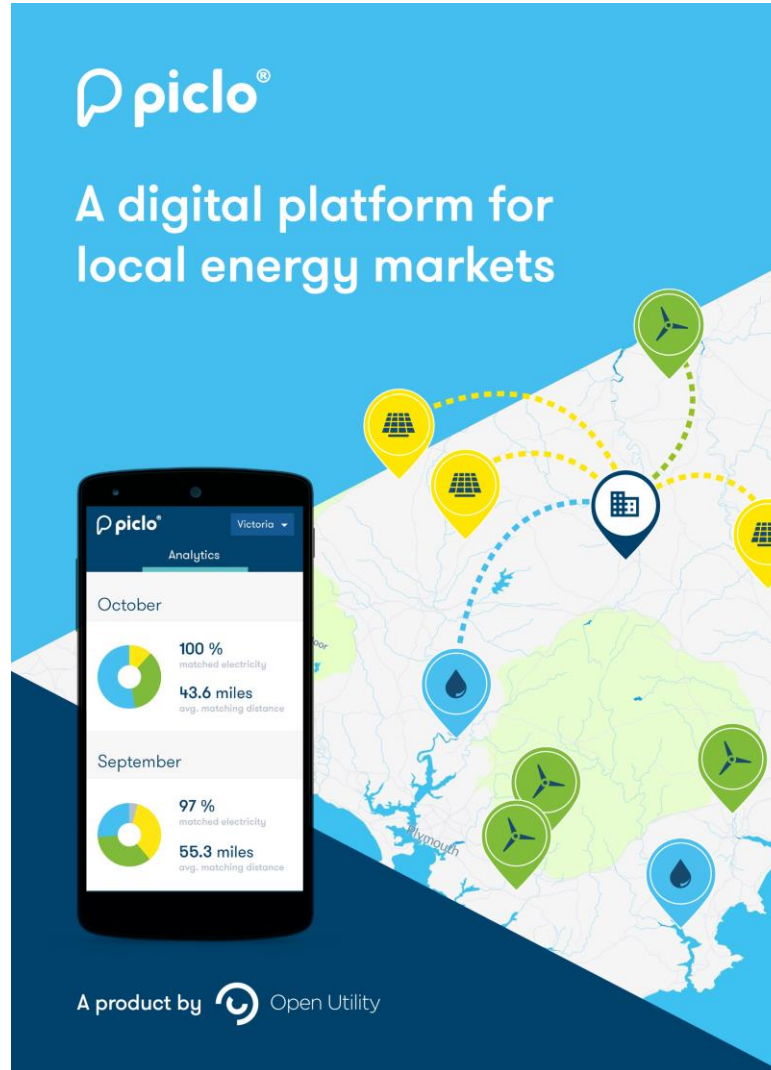


Price via
vandebron

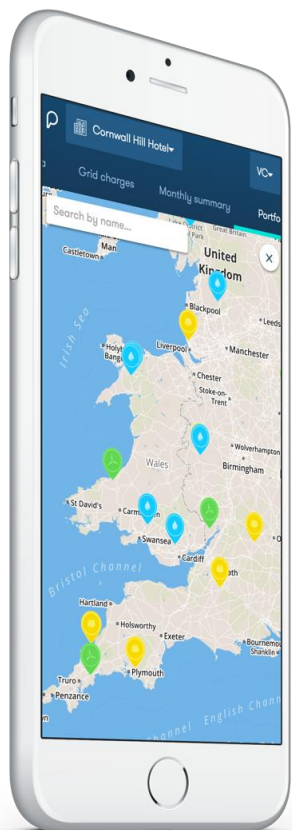


Piclo - UK startup Open Utility

UK Government support - Department of Energy and Climate Change (DECC) and Carbon Trust



<https://www.openutility.com/piclo/>

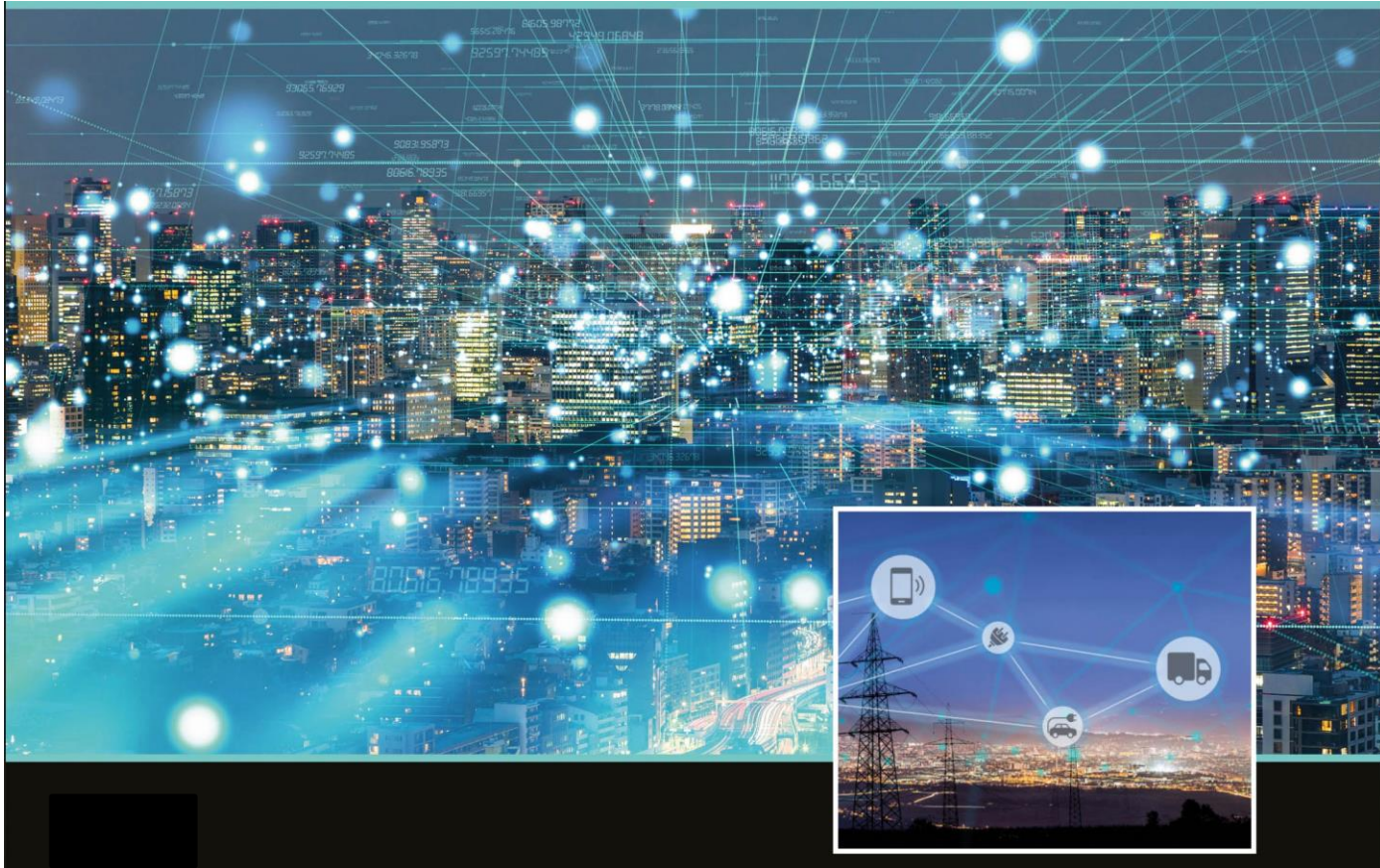


Mosaic – California-based P2P platform for solar power



www.solarmosaic.com

Sharing economy?



The future is now...

References

- Crosby, M. (2014). An Airbnb or Uber for the Electricity Grid? How DERs prepare the power sector to evolve into a sharing economy platform. RMI outlet blog, RMI. Available at: http://blog.rmi.org/blog_2014_09_02_an_airbnb_or_uber_for_the_electricity_grid
- Lisin, E., Strielkowski, W., & Garanin, I. (2015). Economic efficiency and transformation of the Russian energy sector. *Economic research-Ekonomska istraživanja*, 28(1), 620-630. <https://doi.org/10.1080/1331677X.2015.1086886>
- Parag, Y., & Sovacool, B.K. (2016). Electricity market design for the prosumer era. *Nature Energy*, 1, 16032. <https://doi.org/10.1038/nenergy.2016.32>
- Rocky Mountain Institute (2017). *Economics of Load Defection*. Available at: <https://rmi.org/insights/reports/economics-load-defection/>
- Strielkowski, W. (2019). Social impacts of smart grids: the future of the smart grids and energy market design, 1st edn., London: Elsevier, 342 p., ISBN 978-012-817-770-9 <https://www.elsevier.com/books/social-impacts-of-smart-grids/strielkowski/978-0-12-817770-9>
- Strielkowski, W., Lisin, E., & Tvaronavičienė, M. (2016). Towards energy security: sustainable development of electrical energy storage. *Journal of Security & Sustainability Issues*, 6(2), 235-244. [http://dx.doi.org/10.9770/jssi.2016.6.2\(4\)](http://dx.doi.org/10.9770/jssi.2016.6.2(4))
- Strielkowski, W., & Bilan, Y. (2016). Economics of electricity pricing and consumer protection. *Economic Annals-XXI*, 162(11-12), 28-31. <https://doi.org/10.21003/ea.V162-06>
- Strielkowski, W. (2016). Entrepreneurship, sustainability, and solar distributed generation. *Entrepreneurship and Sustainability Issues*, 4(1), 9-16. [https://doi.org/10.9770/jesi.2016.4.1\(1\)](https://doi.org/10.9770/jesi.2016.4.1(1))
- Štreimikienė, D., Strielkowski, W., Bilan, Y., & Mikalauskas, I. (2016). Energy dependency and sustainable regional development in the Baltic States: A review. *Geographica Pannonica*, 20(2), 79-87. <http://dx.doi.org/10.18421/GP20.02-04>

Thank you for your attention!

Q&A

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