

nature sustainability

[nature](#) > [nature durabilit  ](#) > [perspectives](#) > [article](#)

Perspective | Publi  : 16 Ao  t 2021

Les allocations carbone personnelles revisit  es

[Francesco Fuso Nerini](#) , [Tina Fawcett](#), [Yael Parag](#) & [Paul Ekins](#)

[Nature Durabilit  ](#) **4**, 1025–1031 (LIVRAISON2021')

95k Acc  s | **1371** Altm  trique | [M  triques](#)

Abstrait

Nous discutons ici de la fa  on dont les quotas carbone personnels (PCA) pourraient jouer un r  le dans la r  alisation des objectifs ambitieux d'att  nuation du climat. Nous soutenons que les progr  s r  cents de l'IA pour le d  veloppement durable, ainsi que la n  cessit   d'une reprise    faible   mission de carbone de la crise COVID-19, ouvrent une nouvelle fen  tre d'opportunit   pour les APC. En outre, nous pr  sentons des principes de conception bas  s sur les Objectifs de D  veloppement Durable pour l'adoption future des APC. Nous concluons que les APC pourraient   tre test  s dans certains pays technologiquement avanc  s soucieux du climat conscient des probl  mes potentiels li  s    l'int  gration dans le m  lange actuel de politiques, aux pr  occupations en mati  re de protection de la vie priv  e et aux impacts sur la distribution.

Ceci est un aper  u du contenu de l'abonnement, et [acc  s via votre institution](#)

Options d'acc  s

Access Nature et 54 autres revues du Portefeuille Nature

Obtenez Nature+, notre meilleur rapport qualit  -prix en ligne

24,99 € /30 jours
annuler à tout moment

En savoir plus

Acheter cet article

- Acheter sur SpringerLink
- Accès instantané à l'article complet PDF

Achetez maintenant

Abonnez-vous à ce journal

Recevez 12 numéros numériques et un accès en ligne aux articles

115,66 € par an
seulement 9,64 € par numéro

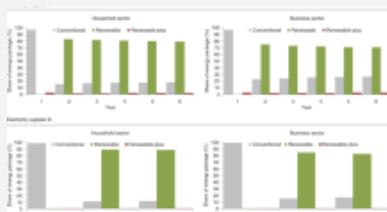
En savoir plus

Les prix peuvent être soumis à des taxes locales calculées lors du paiement

Options d'accès supplémentaires:

- [Se connecter](#)
- [En savoir plus sur les abonnements institutionnels](#)
- [Lisez nos FAQ](#)
- [Contacter le support client](#)

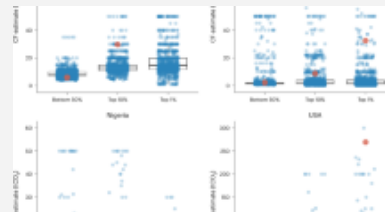
Contenu similaire vu par d'autres



Effets importants et persistants des défauts d'énergie verte dans les secteurs des ménages...



Équité, innovation technologique et comportement durable dans un avenir sobre e...



Sous-estimation de l'inégalité de l'empreinte carbone personnelle dans quatre pays...

Article | Accès ouvert

Article | 11 Mars 2021

Article | 31 Janvier 2022

12 Septembre 2024

R  f  rences

1. Fuso Nerini, F. et coll. Relier l'action climatique avec d'autres Objectifs de D  veloppement Durable. *Nat. Soutenir*. **2674**–680 (2019).
2. *Warming Projections Mise    jour Globale* (Climate Action Tracker, 2021); et <https://climateactiontracker.org/publications/global-update-climate-summit-momentum/>
3. IEA *Perspectives mondiales de l'  nergie 2020* (OCDE, 2020); <https://doi.org/10.1787/557a761b-en>
4. *Reducing UK Emissions: 2020 Progress Report to Parliament* (UK Climate Change Committee, 2020); <https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-parliament/>
5. Fawcett, T. Personal carbon trading: a policy ahead of its time? *Energy Policy* **38**, 6868–6876 (2010).
6. Fawcett, T. & Parag, Y. An introduction to personal carbon trading. *Clim. Policy* **10**, 329–338 (2010).
7. Suryapratim, R. *Situating the Individual Within a Behavioural Law and Economics Approach to End-User*. Doctoral thesis, Univ. Groningen (2017).

8. Parag, Y. & Fawcett, T. Personal carbon trading: a review of research evidence and real-world experience of a radical idea. *Energy Emiss. Control Technol.* **2**, 23–32 (2014).

9. *Synthesis Report on the Findings from Defra's Pre-Feasibility Study into Personal Carbon Trading* (DEFRA, 2008).

10. Fleming, D. *Energy and the Common Purpose: Descending the Energy Staircase with Tradable Energy Quotas (TEQs)* (The Lean Economy Connection, 2007).

11. *Cap and Share—A Fair Way to Cut Greenhouse Emissions* (FEASTA, 2008); <https://www.feasta.org/2008/05/29/cap-and-share-a-fair-way-to-cut-greenhouse-emissions/>

12. Niemeier, D. et al. Rethinking downstream regulation: California's opportunity to engage households in reducing greenhouse gases. *Energy Policy* **36**, 3436–3447 (2008).

13. Raux, C. & Marlot, G. A system of tradable CO₂ permits applied to fuel consumption by motorists. *Transp. Policy* **12**, 255–265 (2005).

14. Woerdman, E. & Bolderdijk, J. W. Emissions trading for households? A behavioral law and economics perspective. *Eur. J. Law Econ.* **44**, 553–578 (2017).

15. Ayres, R. U. Environmental market failures: are there any local market-based corrective mechanisms for global problems? *Mitig. Adapt. Strateg. Glob. Change* **1**, 289–309 (1997).

16. Chatterton, T. *An Introduction to Thinking about 'Energy Behaviour': A Multi Model Approach* (Department of Energy and Climate Change, 2011);
<https://www.gov.uk/government/publications/thinking-about-energy-behaviour-a-multi-model-approach>

17. Darby, S. *Literature Review for the Energy Demand Research Project* (Environmental Change Institute, Univ. Oxford, 2010).

18. Zanni, A. M., Bristow, A. L. & Wardman, M. The potential behavioural effect of personal carbon trading: results from an experimental survey. *J. Environ. Econ. Policy* **2**, 222–243 (2013).

19. Bator, R. J., Tabanico, J. J., Walton, M. L. & Schultz, P. W. Promoting energy conservation with implied norms and explicit messages. *Soc. Infl.* **9**, 69–82 (2014).

20. Schultz, P. W., Nolan, J. M., Cialdini, R. B., Goldstein, N. J. & Griskevicius, V. The constructive, destructive, and reconstructive power of social norms: research article. *Psychol. Sci.* **18**, 429–434 (2007).

21. Kormos, C., Gifford, R. & Brown, E. The influence of descriptive social norm information on sustainable transportation behavior: a field experiment. *Environ. Behav.* **47**, 479–501 (2015).

22. Parag, Y., Capstick, S. & Poortinga, W. Policy attribute framing: a comparison between three policy instruments for personal emissions reduction. *J. Policy Anal. Manage.* **30**, 889–905 (2011).

23. Parag, Y. & Eyre, N. Barriers to personal carbon trading in the policy arena. *Clim. Policy* **10**, 353–368 (2010).

24. Corner, A. Personal carbon allowances—a ‘big idea that never took off’. *The Guardian* <https://www.theguardian.com/sustainable-business/personal-carbon-allowances-budgets> (30 April 2012).

25. Fuso Nerini, F., Swain, A. & Swain, R. B. Sustainable development in the wake of COVID-19. Preprint at *ResearchSquare* <https://doi.org/10.21203/rs.3.rs-63414/v1> (2020).

26. Shan, Y. et al. Impacts of COVID-19 and fiscal stimuli on global emissions and the Paris Agreement. *Nat. Clim. Change* **11**, 200–206 (2020).

27. Vinuesa, R. et al. The role of artificial intelligence in achieving the Sustainable Development Goals. *Nat. Commun.* **11**, 233 (2020).

28. *Personal Carbon Trading—Fifth Report of Session 2007–08* (UK House of Commons Environmental Audit Committee, 2008); <https://publications.parliament.uk/pa/cm200708/cmselect/cmenvaud/565/565.pdf>

29. Gough, I. *Heat, Greed and Human Need: Climate Change, Capitalism and Sustainable Wellbeing* (Elgar, 2017).

30. Lockwood, M. The economics of personal carbon trading. *Clim. Policy* **10**, 447–461 (2010).

31. Drummond, P. & Ekins, P. Reducing CO₂ emissions from residential energy use. *Build. Res. Inf.* **44**, 585–603 (2016).

32. Rosenow, J., Fawcett, T., Eyre, N. & Oikonomou, V. Energy efficiency and the policy mix. *Build. Res. Inf.* **44**, 562–574 (2016).

33. Whitmarsh, L., Seyfang, G. & O'Neill, S. Public engagement with carbon and climate change: to what extent is the public 'carbon capable'? *Glob. Environ. Change* **21**, 56–65 (2011).

34. Andersson, D., Lofgren, A. & Widergerg, A. *Attitudes to Personal Carbon Allowances* (School of Business, Economics and Law, Univ. Gothenburg, 2011); <https://gupea.ub.gu.se/handle/2077/25549>

35. Starkey, R. Personal carbon trading: a critical survey. Part 1: equity. *Ecol. Econ.* **73**, 7–18 (2012).

36. IPCC *Special Report on Global Warming of 1.5 °C* (eds Masson-Delmotte, V. et al.) (WMO, 2018); <http://www.ipcc.ch/report/sr15/>

37. Martiskainen, M. et al. Contextualizing climate justice activism: knowledge, emotions, motivations, and actions among climate strikers in six cities. *Glob. Environ. Change* **65**, 102180 (2020).

38. Parth, A.-M., Weiss, J., Firat, R. & Eberhardt, M. "How dare you!"—the influence of Fridays for Future on the political attitudes of young adults. *Front. Polit. Sci.* **2**, 611139 (2020).

39. Marquardt, J. Fridays for Future's disruptive potential: an inconvenient youth between moderate and radical Ideas. *Front. Commun.* **5**, 48 (2020).
-
40. Woerdman, E., Couwenberg, O. & Nentjes, A. Energy prices and emissions trading: windfall profits from grandfathering? *Eur. J. Law Econ.* **28**, 185–202 (2009).
-
41. Willis, R. *Too Hot to Handle? The Democratic Challenge of Climate Change* (Bristol Univ. Press, 2020).
-
42. *Emissions Gap Report 2020* (UNEP, 2020); <https://www.unep.org/emissions-gap-report-2020>
-
43. Akinbi, A., Forshaw, M. & Blinkhorn, V. Contact tracing apps for the COVID-19 pandemic: a systematic literature review of challenges and future directions for neo-liberal societies. *Heal. Inf. Sci. Syst.* **9**, 18 (2021).
-
44. Shahroz, M. et al. COVID-19 digital contact tracing applications and techniques: a review post initial deployments. *Transp. Eng.* **5**, 100072 (2021).
-
45. Kapa, S., Halamka, J. & Raskar, R. Contact tracing to manage COVID-19 spread—balancing personal privacy and public health. *Mayo Clin. Proc.* **95**, 1320–1322 (2020).
-
46. Sharma, T. & Bashir, M. Use of apps in the COVID-19 response and the loss of privacy protection. *Nat. Med.* **26**, 1165–1167 (2020).
-

47. Darby, S.J. The role of smart meters in carbon management. *Carbon Manage.* **4**, 111–113 (2013).

48. Sullivan, R. K. et al. Smartphone apps for measuring human health and climate change co-benefits: a comparison and quality rating of available apps. *JMIR mHealth uHealth* **4**, e135 (2016).

49. Nunes, I. & Jannach, D. A systematic review and taxonomy of explanations in decision support and recommender systems. *User Model. User Adapt. Interact.* **27**, 393–444 (2017).

50. Zawacki-Richter, O., Mar  n, V. I., Bond, M. & Gouverneur, F. Systematic review of research on artificial intelligence applications in higher education–where are the educators? *Int. J. Educ. Technol. High. Educ.* **16**, 39 (2019).

51. Park Woolf, B. *Building Intelligent Interactive Tutors: Student-Centered Strategies for Revolutionizing E-Learning* (Elsevier, 2009).

52. Fuso Nerini, F. et al. Mapping synergies and trade-offs between energy and the Sustainable Development Goals. *Nat. Energy* **3**, 10–15 (2018).

53. Fawcett, T. Personal carbon trading in different national contexts. *Clim. Policy* **10**, 339–352 (2010).

54. Woerdman, E. Path-dependent climate policy: the history and future of emissions trading in Europe. *Eur. Environ.* **14**, 261–275 (2004).

-
55. OECD in *Science, Technology and Industry Outlook 2010* 251–279 (OECD, 2010).
-
56. Gunningham, N. & Sinclair, D. Regulatory pluralism: designing policy mixes for environmental protection. *Law Policy* **21**, 49–76 (1999).
-
57. Kern, F., Kivimaa, P. & Martiskainen, M. Policy packaging or policy patching? The development of complex energy efficiency policy mixes. *Energy Res. Soc. Sci.* **23**, 11–25 (2017).
-
58. Howlett, M. & Rayner, J. in *Handbook of Policy Formulation* (eds Howlett, M. et al) 112–128 (Edward Elgar, 2017).
-
59. Dobbins, A., Fusco Nerini, F., Deane, P. & Pye, S. Strengthening the EU response to energy poverty. *Nat. Energy* **4**, 2–5 (2019).
-
60. Véliz, C. Privacy and digital ethics after the pandemic. *Nat. Electronics* **4**, 10–11 (2021).
-
61. Thumim, J. & White, V. *Distributional Impacts of Personal Carbon Trading: A Report to the Department for Environment, Food and Rural Affairs* (DEFRA, 2008); <https://www.gov.uk/government/organisations/department-for-environment-food-rural-affairs/about/research> (2008).
-
62. Li, J., Fan, J., Zhao, D. & Wang, S. Allowance price and distributional effects under a personal carbon trading scheme. *J. Clean. Prod.* **103**, 319–329 (2015).
-
63. Uusitalo, E., Kuokkanen, A., Uusitalo, V., von Wright, T. & Huttunen, A. Personal carbon trading in mobility may have positive distributional effects. *Case Stud.*

Transp. Policy **9**, 315–323 (2021).

64. Parag, Y. & Strickland, D. Personal carbon trading: a radical policy option for reducing emissions from the domestic sector. *Environment* **53**, 29–37 (2011).

Acknowledgements

F.F.N. acknowledges the KTH Climate Action Centre for providing a platform for this research. T.F. acknowledges funding from UK Research and Innovation via the Centre for Research into Energy Demand Solutions (grant agreement number EP/R035288/1).

Author information

Authors and Affiliations

KTH Climate Action Centre & KTH division of Energy Systems, School of Industrial Engineering and Management, KTH Royal Institute of Technology, Stockholm, Sweden

Francesco Fuso Nerini

Environmental Change Institute, University of Oxford, Oxford, UK

Tina Fawcett

School of Sustainability, Interdisciplinary Center Herzliya, Herzliya, Israel

Yael Parag

Institute for Sustainable Resources, University College London, London, UK

Paul Ekins

Contributions

F.F.N. a dirig   la conception, la conception, l'  criture et les r  visions du manuscrit. T.F., Y.P. et P.E. ont tous contribu      la conception du travail, au d  veloppement du contenu,    la r  daction et aux r  visions.

Auteur correspondant

Correspondance    [Francesco Fuso Nerini](#).

Déclarations d'éthique

Des intérêts concurrents

Les auteurs ne déclarent aucun intérêt concurrent.

Informations supplémentaires

Information sur l'examen par les pairs: *Nature Durabilité* merci Jing Wan et Edwin Woerdman pour leur contribution à l'examen par les pairs de ce travail.

Éditeur's note Springer Nature reste neutre en ce qui concerne les revendications juridictionnelles dans les cartes publiées et les affiliations institutionnelles.

Droits et autorisations

[Réimpressions et autorisations](#)

A propos de cet article

Citer cet article

Fuso Nerini, F., Fawcett, T., Parag, Y. *et al.* Les allocations carbone personnelles revisitées. *Nat Sustain* 41025–1031 (2021). <https://doi.org/10.1038/s41893-021-00756-w>

Reçu

15 Mars 2021

Accepté

07 Juillet 2021

Publié

16 Août 2021

Date d'Émission

Décembre 2021

DOI

<https://doi.org/10.1038/s41893-021-00756-w>

Sujets

[Atténuation du changement climatique](#)

• [Politique](#)

• [Durabilité](#)

