

Machine learning to find optimal carbon tax policy to increase investment in low-carbon technologies using agent-based models

Anonymized

ABSTRACT

Placeholder

KEYWORDS

Energy markets, policy, carbon tax, genetic algorithm, optimization

ACM Reference Format:

Anonymized. 2020. Machine learning to find optimal carbon tax policy to increase investment in low-carbon technologies using agent-based models. In *ICPE '20: ACM/SPEC International Conference on Performance Engineering*, April 20–24, 2020, Edmonton, Canada. ACM, New York, NY, USA, 2 pages. <https://doi.org/10.1145/3185768.3186313>

1 INTRODUCTION

ACM’s consolidated article template, introduced in 2017, provides a consistent \LaTeX style for use across ACM publications, and incorporates accessibility and metadata-extraction functionality necessary for future Digital Library endeavors. Numerous ACM and SIG-specific \LaTeX templates have been examined, and their unique features incorporated into this single new template.

If you are new to publishing with ACM, this document is a valuable guide to the process of preparing your work for publication. If you have published with ACM before, this document provides insight and instruction into more recent changes to the article template.

The “acmart” document class can be used to prepare articles for any ACM publication — conference or journal, and for any stage of publication, from review to final “camera-ready” copy, to the author’s own version, with very few changes to the source.

2 LITERATURE REVIEW

As noted in the introduction, the “acmart” document class can be used to prepare many different kinds of documentation — a double-blind initial submission of a full-length technical paper, a two-page SIGGRAPH Emerging Technologies abstract, a “camera-ready” journal article, a SIGCHI Extended Abstract, and more — all by selecting the appropriate *template style* and *template parameters*.

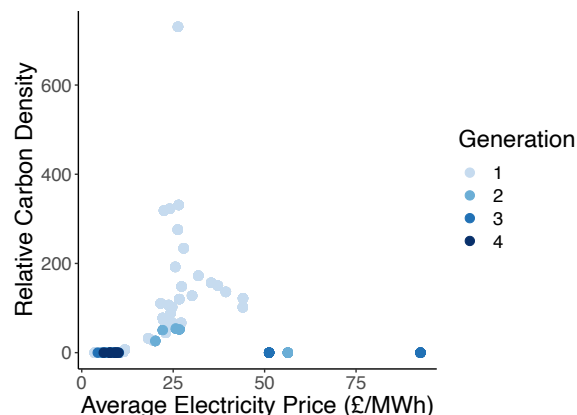
Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for components of this work owned by others than ACM must be honored. Abstracting with credit is permitted. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee. Request permissions from permissions@acm.org.

ICPE '20, April 20–24, 2020, Edmonton, Canada

© 2020 Association for Computing Machinery.

ACM ISBN 978-1-4503-XXXX-X/18/06...\$15.00

<https://doi.org/10.1145/3185768.3186313>



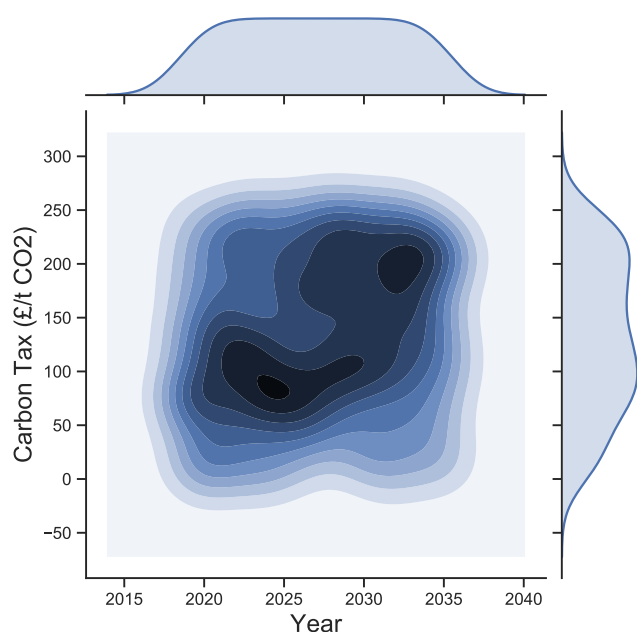


Figure 2: 2D density plot of carbon tax strategies that led to an average electricity price of below £5/MWh by 2035.

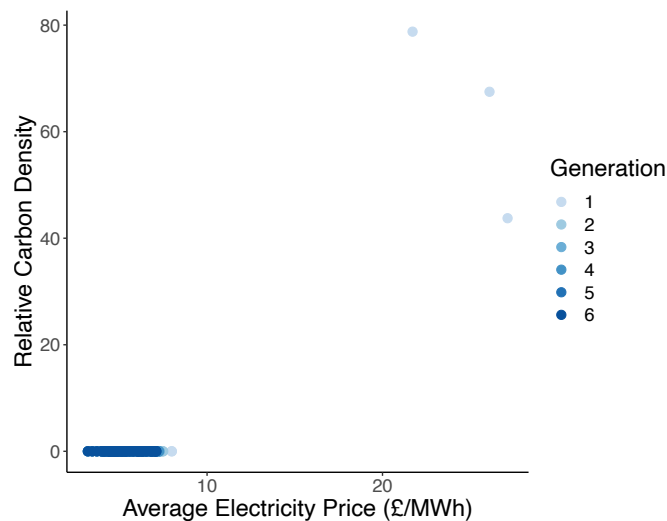


Figure 3: Development of genetic algorithm rewards of average electricity price and relative carbon density in 2035 over time for linear carbon strategy.

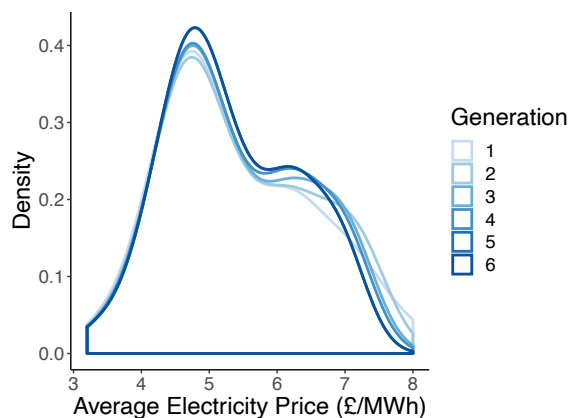


Figure 4: Density plot of average electricity price smaller than £8/MWh in 2035 over generation number of genetic algorithm.

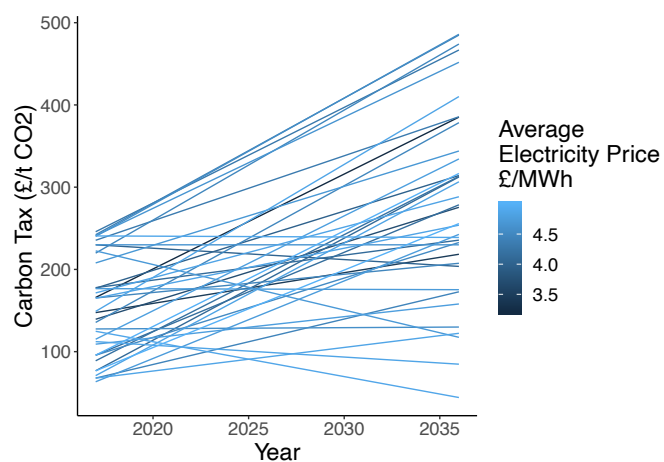


Figure 5: Linear carbon tax strategies visualised with average electricity price smaller than £5/MWh.

REFERENCES