VITA: BRIAN P. FLANNERY January 2019

Contact Information

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Education:

A.B. Princeton University, June 1970
(High Honors in Astrophysics)

Ph.D. (Astrophysics) University of California, Santa Cruz, September 1974

Current Affiliation:

Resources for the Future: Visiting Fellow (2012-present)

Past Positions:

Exxon Mobil Corporation (1998-2011): Manager Science, Strategy and Programs
Environmental Policy and Planning Department (2009-2011)
Safety, Health and Environment Department (1998-2009)

Corporate Research, Exxon Research and Engineering Company (1980-1998):
Scientific Advisor (1997-98)
Senior Research Associate (1994-96)
Section Head: Global Climate Change (1990-1993)
Section Head: Advanced Modeling and Applied Mathematics (1988-1990)
Group Head: Applied Mathematics (1985-86)
Group Head: Transport Processes (1983-85)
Research Associate (1983-93); Senior Staff Physicist (1980-82)

Associate Professor of Astronomy (1980)
Assistant Professor (1976-80)
Harvard University, Cambridge, MA

Visiting Fellow (1980-85)
The Institute for Advanced Study
Princeton, NJ

Post-doctoral Associate (1974-1976)
The Institute for Advanced Study
Princeton, NJ

Visiting Scientist (1978)
Institute of Astronomy
Cambridge University, Cambridge, England

Principle Contributions

Astrophysics: Analyses of stellar evolution in close and contact double stars helping to explain exotic systems including those with x-ray sources, black holes, novae and pulsars.

Materials science: Inventing a system, including high-resolution imaging detectors and fast computational procedures, for 3-D synchrotron x-ray micro-tomography to produce gigabyte digital maps of mm-sized objects with micron resolution and elemental mapping.

Computational methods: author of *Numerical recipes: the art of scientific computing*, providing the mathematical basis for algorithms, working computer subroutines for them, and explanations for their use (and potential misuse); widely used in science, engineering, economics and other fields requiring computational analyses.

Energy and Climate change:

Early development of energy balance models, extending them to transport of latent as well as thermal heat, including initial studies of paleoclimate and transient climate change with increasing GHG concentrations.

One of the few scientists from industry involved with IPCC as an observer (1988-2007) and lead author (Working Group III third and fourth assessments: 1998-2004).

Capacity Building: On behalf of ExxonMobil helped to conceive, create and recruit sponsors for
The Joint Program on Science and Policy of Global Change at MIT, and
The Global Climate and Energy Project at Stanford University.

Contributing to dialogue and discussion in the expert analytical community involving academics, think tanks, government experts and business representatives, especially to provide perspectives on then current understanding of climate science, technology, economics and policy, and in part to inform directions for future research.

Building awareness and understanding of technical and policy aspects of the climate issue, especially within the business community and concerning business implications:

- Creation of the Global Climate Change Working Group in IPIECA (1988) for the petroleum industry… leading to a series of expert workshops and symposia on science, technology, economics and policy, and liaison with IPCC and UNFCCC processes;
- Development through IPIECA of industry endorsed guidelines for reporting greenhouse gas emissions from the oil and gas industry;
- Observer (since 1990) for business (and RFF since 2012) at UNFCCC meetings and providing meeting reports to experts from business, academia, think tanks and governments regarding developments and implications;
- Helping to develop understanding and consensus on issues dealing with international climate policy for the United States Council for International Business, International Chamber of Commerce and the Major Economies Business Forum;
- Creation of the International Business Green Economy Dialogues in the lead up to Rio + 20 on issues related to green growth with sessions in Washington, Paris, Beijing, Tokyo, Brasilia and Rio de Janeiro.

Books & Software

Numerical Recipes: The Art of Scientific Computing, W. H. Press, B. P. Flannery, S. Teukolsky, and W. T. Vetterling (Cambridge University Press: New York) 1986 (818 pages).

Numerical Recipes in C: The Art of Scientific Computing, W. H. Press, B. P. Flannery, S. Teukolsky, and W. T. Vetterling (Cambridge University Press: New York) 1988 (735 pages).

Numerical Recipes in Pascal: The Art of Scientific Computing, W.H. Press, B. P. Flannery, S. Teukolsky, and W.T. Vetterling (Cambridge University Press: New York) 1989 (759 pages).

Numerical Recipes: The Art of Scientific Computing (FORTRAN Version), W.H. Press, B. P. Flannery, S. Teukolsky, and W.T. Vetterling (Cambridge University Press: New York) 1989 (702 pages).

Numerical Recipes in FORTRAN: The Art of Scientific Computing, Second Edition, W. H. Press, S. A. Teukolsky, W. T. Vetterling, and B. P. Flannery, (Cambridge University Press: New York) 1992 (963 pages).

Numerical Recipes in C: The Art of Scientific Computing, Second Edition, W. H. Press, S. Teukolsky, W. T. Vetterling, and B. P. Flannery, (Cambridge University Press: New York) 1992 (994 pages).

Numerical Recipes in C++: The Art of Scientific Computing, Second Edition, W. H. Press, S. Teukolsky, W. T. Vetterling, and B. P. Flannery, (Cambridge University Press: New York) 2002 (1002 pages).

Numerical Recipes: The Art of Scientific Computing, Third Edition, W. H. Press, S. Teukolsky, W. T. Vetterling, and B. P. Flannery, (Cambridge University Press: New York) 2007 (1235 pages).

Climate Change and Energy Efficiency in Industry, Prepared for the International Petroleum Industry Environmental Conservation Association, and the United Nations Environment Program by B. P. Flannery, R.W. Partridge, J.M Priestley, S. Smith, K.J. Wilbraham, J.S. Lemlin, with Robin Clarke editor, (Words and Publications: Oxford) 1991 (64 pages).

Global Change a Petroleum Industry Perspective, Proceedings of the IPIECA Symposium, Rome, Italy, B. P. Flannery and Robin Clarke, editors (Words and Publications: Oxford) 1991 (268 pages).

Patents

Method of promoting nucleation of solute in a solution, A. E. Cerkanowicz, I. D. Crane, B. P. Flannery, R. J. L. Chimenti, US Patent 4,622,119, November 11, 1986.

Apparatus for three-dimensional tomography utilizing an electro-optic x-ray detector, B. P. Flannery, H.W. Deckman, P.M. Eisenberger, and W.G. Roberge, US Patent Number 4,833,698, May 23, 1989.

Method for producing tomographic images using direct Fourier inversion, W.G. Roberge, and B. P. Flannery, Canadian Patent 1,262,780, November 7, 1989.

Method and apparatus for utilizing an electro-optic detector in a microtomography system, H. W. Deckman and B. P. Flannery, U.S. Patent Number 4,891,829, January 2, 1990.

Method for producing tomographic images using direct Fourier inversion, W.G. Roberge, and B. P. Flannery, U.S. Patent 4,991,093, February 5, 1991.

Major Committees, Advisory Panels, Editorial Boards

- Major Economies Business Forum, Chair business engagement (2009-)
- Stanford University, School of Engineering Advisory Committee, 2007-2010
- Global Climate and Energy Project, Management Committee 2002-2011
- International Business Green Economies Dialogues, Chair (2011-2012)
- Intergovernmental Panel on Climate Change, WG III (Lead Author)
  Third Assessment Report: Decision Making Frameworks (1998-2001)
  Fourth Assessment Report: Mitigation from a cross-sectoral perspective (2004-2007)
- United States Council for International Business
  Environmental Steering Committee 1998-2011
  Chair International Energy Working Group 2005-2011
- International Chamber of Commerce
  Vice Chair Energy Commission 1998- 2000
  Vice Chair Environment and Energy Commission 2003-2011
- US DOE Climate Change Science Program Development Advisory Committee (2006-2009)
  Review of reports on stabilization scenarios, emissions scenarios and climate models
- *Annual Reviews of Energy and Environment*, Editorial Committee, 1992-1996
- *Consequences*, Editorial Committee, 1996-98
- International Geosphere Biosphere Program Evaluation Committee, 1994-96
- U.S. EPA, Subcommittee on Global Climate Change, Science Advisory Board, 1988-89
- North Atlantic Treaty Organization, Collaborative Research Grants Panel, 1984-86
- US Department of Energy, *State-of-the-Art Review of Greenhouse Science*, 1984
- International Petroleum Industry Environmental Conservation Association (IPIECA)
  Executive Committee 1998-2006
  Working Group Global Climate Change, 1988-2011, Vice Chair 1995-97, Chair 1997-99
  Organizer and Chair, IPIECA *Expert's Workshop on Climate Change Policy Development and Analysis*, Lisbon, Portugal, April 15-16, 1991
  Organizer and Chair, IPIECA Symposium: *Global Change a Petroleum Industry Perspective*, Rome, Italy, April 12-15, 1992
  Organizer and Chair, IPIECA *Expert's Workshop on Socio-Economic Assessment of Climate Change*, Lisbon, Portugal, November 8-10, 1993
  Organizer and Chair, IPIECA Symposium, *A Critical Review of the Economics of Global Climate Change*, Paris, France, October 8-11, 1996
  Organizer and Chair, IPIECA Symposium, *Long-Term Carbon and Energy Management: Issues and Approaches*, Cambridge, MA, Oct. 15-18, 2001

BIBLIOGRAPHY: Brian P. Flannery

Ultrashort-period binaries: II. HZ29 (=AM CVn): a double-white dwarf semidetached postcataclysmic nova? John Faulkner, B. P. Flannery, and Brian Warner, Astrophysical Journal Letters 175, L79-L83, July 15, 1972.

Expansion of the planetary nebula surrounding FG Sagittae. B. P. Flannery and G. H. Herbig, Astrophysical Journal 183, 491-498, July 15, 1973.

An approximate equation of state for stellar material. Peter P. Eggleton, John Faulkner, and B. P. Flannery, Astronomy & Astrophysics 23, 325-330, 1973.

Tides in strong gravitational fields - a differing viewpoint. John Faulkner and B. P. Flannery, an essay submitted to the Gravity Research Foundation Competition 1973 (honorable mention).

Cygnus X-1, a black hole discovered? B. P. Flannery, an essay submitted to the Griffith Observatory Competition 1974 (honorable mention), Griffith Observer 38, No. 5, 16-20, May 1974.

The location of the hot spot in cataclysmic variable stars as determined from particle trajectories. B. P. Flannery, Monthly Notices of the Royal Astronomical Society, 170, 325-331, 1975.

On the origin of the binary pulsar PSR 1913+16. B. P. Flannery and E. P. J. van den Heuvel, Astronomy & Astrophysics 39, 61-67, 1975.

Gas flow in cataclysmic variable stars. B. P. Flannery, Astrophysical Journal 201, 661-694, November 1, 1975.

A cyclic thermal instability in contact binary stars. B. P. Flannery, Astrophysical Journal 205, 217-225, April 1, 1976.

Circumstellar matter in the binary V Puppis. Don York, B. P. Flannery, and John Bahcall, Astrophysical Journal 210, 143-152, November 15, 1976.

On the origin of Cen X-3 and related binary x-ray sources. B. P. Flannery and Roger Ulrich, Astrophysical Journal 212, 533-540, March 1, 1977.

A soft x-ray image of the Algol region. F. Harnden, D. Fabricant, K. Topka, B. P. Flannery, W. Tucker, and P. Gorenstein, Astrophysical Journal 214, 418-422, June 1, 1977.

Mass transfer effects in binary star evolution. An invited talk at the Eighth Texas Symposium on Relativistic Astrophysics, B. P. Flannery, Annals of the New York Academy of Sciences 302, 36-46, 1977.

Stellar evolution in double stars. B. P. Flannery, American Scientist 65, 737-743, November 1977.

Tidal fields in general relativity; d'Alembert's principle and the test rigid rod. John Faulkner and B. P. Flannery, Astrophysical Journal 220, 1125-1132, March 15, 1978.

Evolution of the Alpha Centauri system. B. P. Flannery and Thomas Ayres, Astrophysical Journal 221, 175-185, April 1, 1978.

The sedimentation of grains in interstellar clouds. B. P. Flannery and Max Krook, Astrophysical Journal 223, 447-457, July 15, 1978.

On the distance from quasars to absorbing clouds. C. L. Sarazin, B. P. Flannery, and G. B. Rybicki, Astrophysical Journal Letters 227, L113-L116, February 1, 1979.

Ultra-violet pumping of N^+ fine-structure levels. B. P. Flannery, G. B. Rybicki, and C. L. Sarazin, Astrophysical Journal 229, 1057-1073, May 1, 1979.

An asymptotic limit to optical pumping in an opaque region. C. L. Sarazin, G. B. Rybicki, and B. P. Flannery, Astrophysical Journal 230, 456-468, June 1, 1979.

An ionization-coupled acoustic instability of the interstellar medium. B. P. Flannery and W. H. Press, Astrophysical Journal 231, 688-696, August 1, 1979.

The penetration of diffuse ultra-violet radiation into interstellar clouds. B. P. Flannery, W. Roberge, and G. B. Rybicki, Astrophysical Journal 236, 598-608, March 1, 1980.

Gravitational radiation and the evolution of cataclysmic binaries. R. E. Taam, B. P. Flannery, and J. Faulkner, Astrophysical Journal 239, 1017-1023, August 1, 1980.

Non-linear hydrodynamics of acoustic instabilities in diffuse clouds. S. L. W. McMillan, B. P. Flannery, and W. H. Press, Astrophysical Journal 240, 488-498, September 1, 1980.

Ultra-violet pumping of Si^+ fine-structure levels. B. P. Flannery, C. L. Sarazin, and G. B. Rybicki, Astrophysical Journal Supplement Series 44, 539-553, December 1980.

Photoionization and photodissociation in diffuse interstellar clouds. W. G. Roberge, A. Dalgarno, and B. P. Flannery, Astrophysical Journal 243, 817-826, February 1, 1981.

Hydrodynamics of x-ray induced stellar winds. R. A. London and B. P. Flannery, Astrophysical Journal 258, 260-269, July 1, 1982.

A statistical method for determining ages of globular clusters by fitting isochrones. B. P. Flannery and B. C. Johnson, Astrophysical Journal 263, 166-186, December 1, 1982.

Evaporation-limited tropical temperatures as a constraint on climate sensitivity. M. I. Hoffert, B. P. Flannery, A. J. Callegari, C. T. Hseih, and W. Wiscombe, Journal of the Atmospheric Sciences 40, No. 7, 1659-1668, July 1983.

Energy balance models incorporating transport of thermal and latent energy. B. P. Flannery, Journal of the Atmospheric Sciences 41, number 3, 414-421, February 1984.

Energy balance models incorporating evaporative buffering of equatorial thermal response. B. P. Flannery, A. J. Callegari, and M. I. Hoffert (pages 108-117) in: *Climate Processes and Climate Sensitivity*, Maurice Ewing Volume 5, J. Hansen and T. Takahashi editors (American Geophysical Union: Washington, DC) 1984.

CO_2 driven equator-to-pole paleotemperatures: predictions of an energy balance model with and without a tropical evaporation buffer. B. P. Flannery, A. J. Callegari, C. T. Hseih, and M. D. Wainger, published in Geophysical Monograph 32: *The Carbon Cycle and Atmospheric CO_2: Natural Variations Archean to Present*, E. T. Sundquist and W. S. Broecker, editors (American Geophysical Union, Washington, DC) 1985.

Model projections of the time-dependent response to increasing carbon dioxide. M. I. Hoffert and B. P. Flannery, (pages 151-186) in *Projecting the Climatic Effects of Increasing Carbon Dioxide,* United States Department of Energy, M. C. MacCracken and F. M. Luther, editors Lawrence Livermore: Livermore, CA, 1985. [DOE/ER-0237]

Three-dimensional x-ray microtomography. B. P. Flannery, H. W. Deckman, W. G. Roberge, and K. L. D'Amico, Science 237, 1439-1444, September 18, 1987.

Observational strategies for three-dimensional synchrotron microtomography. B. P. Flannery and W. G. Roberge, Journal of Applied Physics 67, 4668-4674, December 15, 1987.

Microtomography detector design: its not just resolution. H. W. Deckman, K. L. D'Amico, J. H. Dunsmuir, B. P. Flannery, and S. M. Gruner, in *Advances in X-ray Analysis*, vol 32, 641-650. C. S. Barrett, J. V. Glifrich, R. Jenkins, T.C. Huang, and P.K. Predecki, editors (Plenum, New York) 1989.

X-ray microtomography with monochromatic synchrotron radiation. K.L. D'Amico, H. W. Deckman, J.H. Dunsmuir, B. P. Flannery, and W. G. Roberge, *Proceedings of the 3rd International Conference on Synchrotron Radiation Instrumentation*, M. Ando and T. Miyahara, editors, Rev. Sci. Instruments, Vol 60, No. 7, Part II, 1524, 1989.

X-ray microtomography: quantitative three-dimensional x-ray microscopy. J. H. Dunsmuir, S. R. Ferguson, K. L. D'Amico, B. P. Flannery, and H. W Deckman, in *Review of Progress in Quantitative Nondestructive Evaluation*, 10A, 443-449. (Plenum Press: New York) 1991.

Marine biota effects on the compositional structure of the world oceans. H. S. Kheshgi and B. P. Flannery, Journal of Geophysical Research, Vol 96, No C3, 4957-4969, March 15, 1991.

Geoengineering climate. Brian P. Flannery, Gregg Marland, Wallace Broecker, Robert Charlson, Haroon Kheshgi, Hisahsi Ishitani, Hiroshi Komiyama, Michael MacCracken, Norm Rosenberg, Myer Steinberg, Tom Wigley, in *Proceeding of the Conference: The Engineering Response to Global Change*, R. Watts, editor, 1992.

Assessing the effectiveness of marine CO_2 disposal. B. P. Flannery, H. S. Kheshgi, M. I. Hoffert and A. G. Lapenis, in *Proceedings of the International Energy Agency Carbon Dioxide Disposal Symposium*, (Pierce W. F. Reimer, Editor), pp. 983-989. Pergamon Press, Oxford. 1993.

The effectiveness of marine CO_2 disposal. H. S. Kheshgi, B. P. Flannery, M. I. Hoffert and A. G. Lapenis, Energy 19, Issue 9, 967-974, September 1994.

Geoengineering climate. B. P. Flannery, H. S. Kheshgi, G. Marland and M. C. MacCracken in *Engineering response to global climate change: planning a research and development agenda,* edited by R. G. Watts, CRC Press LLC. 1997.

An Industry Perspective on Carbon Management, B. P. Flannery in *Carbon Management: Implications for R & D in the Chemical Sciences,* National Academy Press, and pp. 44-59. 2001.

Oil Can, B. P. Flannery, L. J. Ryerkerk and F. B. Sprow, The Environmental Forum, September/October 21-29, 2001.

Decision Making Frameworks, B. P. Flannery (Lead Author) and others, In (B. Metz et al. eds.) *Climate Change 2001:* Mitigation of Climate Change*: Contribution of WGIII to the Third Assessment Report of the IPCC*, Cambridge University Press, New York, 601-688.

An industry perspective on successful development and global commercialization of innovative technologies for GHG mitigation, B. P. Flannery and H. S. Kheshgi, in the proceedings of the Intergovernmental Panel on Climate Change *Workshop on Industry Technology Development, Transfer and Diffusion,* Tokyo, September 2004.

Mitigation from a cross-sectoral perspective, B. P. Flannery (Lead Author) and others, In *Climate Change 2007: Mitigation, Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change,* Cambridge: Cambridge University Press, New York. 2007

Scaling up carbon dioxide capture and storage: From megatons to gigatons, Comment, B. P. Flannery in *The Economics of Technologies to Combat Global Warming,* eds. N. Nakicenovic and W. Nordhaus, Energy Economics, 33 (4), 605-607 (2011). http://dx.doi.org/10.1016/j.eneco.2010.11.009

Green Perspectives, edited by B. P. Flannery and R. S. Tol, Energy Economic, Volume 34, Supplement 1, Pages S1-S94, November 2012. https://www.sciencedirect.com/science/article/pii/S0140988312002204

Perspectives on the workshop: Global, Long-Term Implications of Abundant Gas (Cambridge, MD SEP April 15-17, 2013) by the organizers Brian Flannery, Leon Clarke, Jae Edmonds, July 5, 2103. see: www.globalchange.umd.edu/data/gtsp/topical_workshops/2013/spring/AG_WS_Perspectives.pdf

RFF *Resources* Magazine: Negotiating a Post-2020 Climate Agreement in a Mosaic World, Brian P. Flannery, Resources Magazine, 185, pp. 26-31, Jan 13, 2014. http://rff.org/Publications/Resources/Pages/185-Negotiating-a-Post-2020-Climate-Agreement.aspx

Limited impact on decadal-scale climate change from increased use of natural gas, Haewon McJeon, Jae Edmonds, Nico Bauer, Leon Clarke, Brian Fisher, Brian P. Flannery, Jérôme Hilaire, Volker Krey, Giacomo Marangoni, Raymond Mi, Keywan Riahi, Holger Rogner, and Massimo Tavoni. Nature, 514, 482-485 (Oct 15, 2014), doi: 10.1038/nature13837

RFF Blog: More Natural Gas, Less Warming? Brian Flannery October 15, 2014.
http://common-resources.org/2014/more-natural-gas-less-warming/

Improved representation of investment decisions in assessments of CO_2 mitigation, Gokul C. Iyer, Leon E. Clarke, James A. Edmonds, Brian P. Flannery, Nathan E. Hultman, Haewon C. McJeon and David G. Victor. Nature Climate Change, 5, 436-440 (March 9, 2015), doi:10.1038/nclimate2553)

RFF Blog: Investment Risks Raise Costs and Shift Regional Efforts to Mitigate Emissions, Brian P. Flannery Mar 19, 2015.
http://www.rff.org/blog/2015/investment-risks-raise-costs-and-shift-regional-efforts-mitigate-emissions

The state of the climate negotiations, Brian P. Flannery, contribution to the eBook: *Towards a Workable and Effective Climate Regime,* Editors: Scott Barrett, Carlo Carraro, Jaime de Melo, A VoxEU.org eBook November 10, 2015.
http://www.voxeu.org/content/towards-workable-and-effective-climate-regime

RFF Blog: Questions for COP 21: Before Paris and After, Brian P. Flannery, Raymond J. Kopp, Clayton Munnings, Nov 19, 2015.
http://www.rff.org/blog/2015/questions-cop-21-paris-and-after

- Question 1 for COP 21: Long-term Goal
- Question 2 for COP 21: Transparency
- Question 3 for COP 21: Compliance
- Question 4 for COP 21: Mitigation
- Question 5 for COP 21: Markets
- Question 6 for COP 21: Finance

RFF Issue Brief: Carbon taxes, trade, and border adjustments, Brian P. Flannery, April 20, 2016.
http://www.rff.org/research/publications/carbon-taxes-trade-and-border-tax-adjustments

Informing transparency in the Paris Agreement: the role of economic models, Henry D. Jacoby, Y.-H. Henry Chen and Brian P. Flannery. Climate Policy, vol. 17, pages 873-890, 2017.
Published online: 10 Aug 2017.
http://www.tandfonline.com/doi/full/10.1080/14693062.2017.1357528

RFF Blog: Informing Transparency in the Paris Agreement: The Role of Economic Analyses, Brian P. Flannery Oct 19, 2017. http://www.rff.org/blog/2017/informing-transparency-paris-agreement-role-economic-analyses

Establishment and Evolution of International Markets under the Paris Agreement,
Brian P. Flannery (in Market Mechanisms and the Paris Agreement, Harvard Project on Climate Agreements Edited by: Robert N. Stavins Robert C. Stowe, October 2017).
https://www.belfercenter.org/sites/default/files/files/publication/2017-10_market-mechanisms-paris_v5.pdf

RFF Blog: Solution to a Vexing Climate Policy Problem: WTO-Compliant Border Adjustments, Brian P. Flannery, March 15, 2018. http://www.rff.org/blog/2018/solution-vexing-climate-policy-problem-wto-compliant-border-adjustments

RFF Working Paper: Framework Proposal for a US Upstream Greenhouse Gas Tax with WTO-Compliant Border Adjustments, Brian Flannery, Jennifer Hillman, Jan Mares, Matthew Porterfield, March 15, 2018. http://www.rff.org/research/publications/framework-proposal-us-upstream-greenhouse-gas-tax-wto-compliant-border

RFF *Resources* Magazine: Solving a Climate Policy Problem with Smart Design: WTO-Compliant Border Adjustments, Brian P. Flannery, Resources Magazine, Issue 198 (July 10, 2018). http://www.rff.org/research/publications/solving-climate-policy-problem-smart-design-wto--compliant-border-adjustments

RFF Blog: Determining WTO-Compliant Border Tax Adjustments for 35 Energy-Intense, Trade-Exposed Industries, Brian P. Flannery and Jan W Mares, Oct 30, 2018. http://www.rff.org/blog/2018/determining-wto-compliant-border-tax-adjustments-35-energy-intense-trade-exposed

RFF Working Paper: WTO-Compatible Methodologies to Determine Export Rebates and Import Charges for Products of Energy-Intensive, Trade- Exposed Industries, If There Is an Upstream Tax on Greenhouse Gases, Jan W. Mares and Brian P. Flannery, Oct 30, 2018. http://www.rff.org/research/publications/wto-compatible-methodologies-determine-export-rebates-and-import-charges