

The Water-Energy Nexus in the American West

Edited by **Douglas S. Kenney**, Senior Research Associate, Natural Resources Law Center, University of Colorado School of Law and **Robert Wilkinson**, Adjunct Associate Professor, Bren School of Environmental Science and Management, University of California, Santa Barbara, US

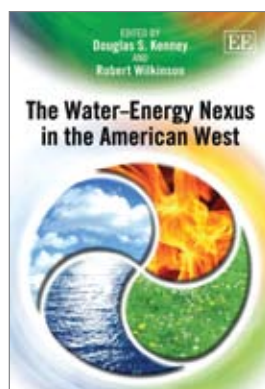
The nexus between water and energy raises a set of public policy questions that go far beyond water and energy. Economic vitality and management of scarce and precious resources are at stake. This book contributes to the body of knowledge and understanding regarding water, energy, and the links between the two in the American West and beyond.

The research and analyses presented by the authors shed new light on the choices that must be made in order to avoid unnecessary harm in the development and management of water and energy systems to meet public needs in an ever changing environmental and economic climate. Indeed, the book shows, thoughtfully designed new technologies and approaches can help restore damaged environments and provide a range of benefits. The focus is the American West, but many of the lessons are global in their applicability. After a broad, stage-setting introductory section, the volume looks first at the use of water for energy production and then follows with chapters on the role of energy in water projects. The final section looks at the way forward, providing cases and recommendations for better, more efficient linkages in the water-energy nexus.

Students and researchers in economics, public policy, environmental studies and law along with planners and policymakers will find this accessible and very current volume invaluable.

Contributors: K. Averyt, M.H. Benson, S.J. Burian, S.A. Conrad, H. Cooley, S. Eden, K.L. Guerra, J.H. Hoover, T. Iseman, M. Kassen, D.S. Kenney, M.L. Lamberton, S.G. Larsen, L.J. MacDonnell, S.B. Megdal, B. Miller, M.J. Pasqualetti, R.C. Pate, A. Schroeder, C.L. Schwartz, C.A. Scott, F. Spivy-Weber, S. Tellinghuisen, R. Wilkinson, J.E. Williams

January 2012 296 pp Hardback 978 1 84980 936 8 \$115.00 • © 978 1 84980 937 5



TO ORDER THIS TITLE,
PLEASE CONTACT:

Edward Elgar Publishing Inc.
PO Box 574
Williston, VT 05495-0575 USA
Tel: (800) 390-3149
Fax: (802) 864-7626
eep.orders@aidcv.t.com

FOR INFORMATION,
PLEASE CONTACT:

The Sales & Marketing Department
Edward Elgar Publishing Inc.
The William Pratt House
9 Dewey Court
Northampton, MA 01060-3815 US
Tel: (413) 584-5551
Fax: (413) 584-9933
elgarsales@e-elgar.com

www.e-elgar.com



FOR YOUR FREE
CATALOGS
elgarinfo@e-elgar.com



EBOOK
ORDERS

Our eBooks are available for individuals from the Google ebookstore (US only) and eBooks.com and for libraries through eBooks on EBSCOhost, Ebrary, EBL, Mylibrary and Dawsonera. They are not available directly from Edward Elgar Publishing or AIDC. For inquiries about purchasing collections email elgarsales@e-elgar.com



EDWARD ELGAR
Publishing
www.e-elgar.com

The Water–Energy Nexus in the American West

Edited by **Douglas S. Kenney** and **Robert Wilkinson**



Contents & Contributors

Preface

PART I: INTRODUCTION AND OVERVIEW

1. The Water–Energy Nexus: Methodologies, Challenges and Opportunities
Robert Wilkinson
2. Energy, Water and the Natural Environment
Melinda Kassen and **Jack E. Williams**

PART IIA: WATER FOR ENERGY

Fossil Fuels

3. The Coal Conundrum
Kristen Averyt
4. Oil Shale and Water
Bart Miller
5. Managing Produced Water from Coalbed Methane Production
Lawrence J. MacDonnell and **Katherine L. Guerra**

PART IIB: WATER FOR ENERGY

Water-Intensive Renewables

6. Concentrated Thermal Solar Power and the Value of Water for Electricity
Cynthia L. Schwartz
7. The New Generation of Biofuels
Ronald C. Pate

PART IIIC: ENERGY FOR WATER

Big Projects

8. Water–Energy Interdependencies and the Central Arizona Project
Susanna Eden, **Christopher A. Scott**,
Melissa L. Lamberton and **Sharon B. Megdal**
9. Energy-Intensive Water Supplies
Stacy Tellinghuisen
10. The Energy Implications of Desalination
Heather Cooley

PART IIIB: ENERGY FOR WATER

Select State Case Studies

11. Energy Requirements for Water Supply in Utah
Sarah G. Larsen and **Steven J. Burian**
12. The Vital Role of Electrical Energy for Arizona Water Services
Joseph H. Hoover

PART IV: SOLUTIONS: EXAMPLES OF WAYS FORWARD

13. Adaptive Management as a Tool for Negotiating the Water–Energy Nexus
Melinda Harm Benson
14. Decision-Support for the Water–Energy Nexus: Examining Decision-making in the American West
Steve A. Conrad
15. Integrated Planning: Transmission, Generation and Water in the Western States
Tom Iseman and **Alex Schroeder**
16. The Water Bargain of Solar and Wind Energy
Martin J. Pasqualetti
17. Water–Energy Integration in California
Frances Spivy-Weber

Index