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ENERGY VERSUS WATER: THE GROWING ROLE OF WATER IN CONTROLLING ENERGY DECISIONS

*Andrea West Wortzel **

INTRODUCTION

Energy and water are integrally linked. Water is necessary to produce and deliver energy,¹ both for cooling and for pollution control. For certain energy sources, such as natural gas and coal, water is needed in the extraction process. Energy powers water treatment processes and pumps for transporting water to end users. Energy is also needed to treat water after it has been used and to return it to the stream or to another user.

The connection between water and energy has been recognized by federal policymakers. In the 2005 Energy Policy Act, Congress directed the Department of Energy (“DOE”) to study this interconnection and identify actions that could be taken to ensure the optimal management and efficient use of both energy and water, in a way that ensures adequate supplies.² The DOE issued its study in 2007, with its primary conclusion that more study is needed.³

Numerous studies have also been completed by the Government Accountability Office (“GAO”) and the Congressional Re-

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1. See *Energy and Industry*, NAT’L GEOGRAPHIC, <http://environment.nationalgeographic.com/environment/freshwater/energy-and-industry/> (last visited Feb. 18, 2014); *Energy-Water Nexus Overview*, SANDIA NAT’L LAB., http://www.sandia.gov/energy-water/nexus_overview.htm (last visited Feb. 18, 2014).

2. Energy Policy Act of 2005, Pub. L. No. 109-58, § 979, 119 Stat. 594, 905 (codified as amended at 42 U.S.C. § 16319 (2006)).

3. U.S. DEP’T OF ENERGY, ENERGY DEMANDS ON WATER RESOURCES: REPORT TO CONGRESS ON THE INTERDEPENDENCE OF ENERGY AND WATER 50–52 (2006), available at http://www.sandia.gov/energy-water/congress_report.htm.

search Service ("CRS").⁴ The conclusion of the most recent CRS report, which summarized five previous reports, was that, due to the complex interplay among all of the issues, more research is needed before solutions can be identified. Additionally, the report recommended integrating the planning processes for energy and water projects.⁵

While debate continues on how to address energy's need for water and water's need for energy, the United States is moving forward with new energy policies, focusing on energy independence and development of alternative energy sources.⁶ Increased development of both traditional and alternative energy sources is projected to place further strain on limited water resources.⁷ As a result, the regulation and allocation of water has an increasingly significant role both in the siting of energy projects and the choice of the energy source.

Decisions about the allocation of water have traditionally been reserved to the states.⁸ However, the federal government has been increasingly involved, primarily in the western United States, in protecting or managing the use of water for hydropower

4. See, e.g., U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-12-880, ENERGY-WATER NEXUS: COORDINATED FEDERAL APPROACH NEEDED TO BETTER MANAGE ENERGY AND WATER TRADEOFFS (2012), available at <http://www.gao.gov/products/GAO-12-880>; NICOLE T. CARTER, CONG. RESEARCH SERV., R41507, ENERGY'S WATER DEMAND: TRENDS, VULNERABILITIES AND MANAGEMENT (2010), available at <http://digital.library.unt.edu/ark:/67531/metadc31387/>.

5. NICOLE T. CARTER, CONG. RESEARCH SERV., R43199, ENERGY-WATER NEXUS: THE ENERGY SECTOR'S WATER USE (2013), available at <https://www.fas.org/sgp/crs/misc/R43199.pdf>.

6. See, e.g., Barack Obama, President of the United States, Remarks by the President on America's Energy Security (Mar. 30, 2011), available at <http://www.whitehouse.gov/the-press-office/2011/03/30/remarks-president-americas-energy-security> (last visited Feb. 18, 2014); see also Wendy Koch, *U.S. Forecasts Rising Energy Independence*, USA TODAY (Dec. 5, 2012), <http://www.usatoday.com/story/news/nation/2012/12/05/usa-energy-independence-renewable/1749073/>.

7. See, e.g., Marianne Lavelle & Thomas K. Grose, *Water Demand for Energy to Double by 2035*, NAT'L GEOGRAPHIC DAILY NEWS (Jan. 30, 2013), <http://news.nationalgeographic.com/news/energy/2013/01/130130-water-demand-for-energy-to-double-by-2035/>; Todd Woody, *Alternative Energy Projects Stumble on a Need for Water*, N.Y. TIMES (Sept. 30, 2009), http://www.nytimes.com/2009/09/30/business/energy-environment/30water.html?pagewanted=all&_r=0.

8. See Clean Water Act § 101(g), 33 U.S.C. § 1251(g) (2006) ("It is the policy of Congress that the authority of each State to allocate quantities of water within its jurisdiction shall not be superseded, abrogated or otherwise impaired by this chapter. It is the further policy of Congress that nothing in this chapter shall be construed to supersede or abrogate rights to quantities of water which have been established by any State."); see also Reed D. Benson, *Deflating the Deference Myth: National Interests vs. State Authority Under Federal Laws Affecting Water Use*, 2006 UTAH L. REV. 241, 242 (2006).

development.⁹ The federal government's role has been focused more on infrastructure development (i.e., construction and operation of dams), rather than on the allocation of water among users.¹⁰ As water shortages have become more common throughout the United States, the federal government has found itself increasingly involved in decisions relating to the use of water.¹¹ However, no clear water policy has emerged from the federal government, in part due to resistance from states asserting that water allocation and regulation of withdrawals remains solely within their domain.

While federal and state governments debate how best to navigate these competing interests and authorities, environmental groups and water users have begun taking matters into their own hands. Using the existing statutory framework, citizens and interest groups have begun to initiate their own causes of action to protect water resources and weigh in on proposed energy projects. This article highlights two recent cases that demonstrate how plaintiffs may use water-related causes of action to influence decisions about energy projects.

I. *THE ARANSAS PROJECT V. SHAW*

A. *Background*

In 2007, Exelon proposed construction of a nuclear power plant in Victoria, Texas.¹² The plans included reallocation of water

9. See U.S. DEPT OF THE INTERIOR, RECLAMATION: MANAGING WATER IN THE WEST, HYDROELECTRIC POWER 17–20 (2005), available at <http://www.usbr.gov/power/edu/pamphlet.pdf>.

10. See *id.*; Benson, *supra* note 8, at 246–47, 249; cf. Ray Huffaker et al., *The Uneasy Hierarchy of Federal and State Water Laws and Policies*, 118 J. CONTEMP. WATER RES. & EDUC. 3, 3 (2001).

11. For example, the management of the water in the Apalachicola-Chattahoochee-Flint river basin by the U.S. Army Corps of Engineers has been at the center of the battle over water between Georgia, Florida, and Alabama. Pema Levy, *Apalachicola Water Wars: A Battle Between Georgia, Florida, and Alabama Is Killing the Last Great Bay*, INT'L BUS. TIMES (Aug. 23, 2013), <http://www.ibtimes.com/apalachicola-water-wars-battle-between-georgia-florida-alabama-killing-last-great-bay-1394907>. The Bureau of Reclamation has been involved in disputes over the management and allocation of water in the western United States. See BUREAU OF RECLAMATION, U.S. DEPT OF THE INTERIOR, WATER 2025: PREVENTING CRISES AND CONFLICT IN THE WEST 2, 10 (2003), available at <http://biodiversity.ca.gov/Meetings/archive/water03/water2025.pdf>.

12. Press Release, Exelon Corporation, Exelon Nuclear Designates Victoria County, Texas, Site for Combined Construction & Operating License Application (Dec. 18, 2007),

rights in the Guadalupe and San Antonio Rivers to the proposed project.¹³ Power plants, particularly nuclear power plants, are subject to a significant federal regulatory permitting process that takes into account all environmental impacts of the project. As part of the environmental regulatory process for Exelon's proposed nuclear power plant on the Guadalupe River, impacts on endangered species, particularly the whooping crane, were subject to evaluation.¹⁴ Ultimately, regulators determined that the project would not adversely impact the whooping cranes.

The Aransas Project ("TAP"), a coalition consisting of businesses and citizens, became concerned that the analysis for the nuclear plant did not adequately consider the needs of the whooping cranes and the project's potential impact on the ecosystem, particularly on freshwater flows to the estuary. The alleged deaths of twenty-three whooping cranes in the winter of 2008–2009 provided TAP with the opportunity to take action to achieve dual goals: protecting the whooping crane and terminating plans for a nuclear power plant.

B. *The Lawsuit*

TAP filed suit in federal court against the Texas Commission on Environmental Quality ("TCEQ") under the Endangered Species Act ("ESA"), alleging that the deaths of the cranes constituted a "take," caused by over-allocation of water in the San Antonio Bay estuary.¹⁵ The complaint alleged that the TCEQ-administered water withdrawal permitting system allowed excessive water withdrawals from the estuary, which exacerbated conditions during times of drought and harmed the whooping

available at <http://www.reuters.com/article/2007/12/18/idUS170663+18-Dec-2007+PRN20071218>.

13. *Aransas Project v. Shaw*, 930 F. Supp. 2d 716, 725 (S.D. Tex. 2013); see *Whooping Crane Lawsuit Threatens Continued Water Delivery in Texas*, 3 IRRIGATION LEADER 4, 4–5 (Apr. 2012), http://www.waterandpowerreport.com/newsletters/April_2012.pdf; *As Guadalupe River Reaches Critical Level, TSEPA Contends: Not Enough Water for Exelon*, THE GONZALES INQUIRER (June 29, 2009), http://www.gonzalesinquirer.com/news/article_e30c054c-3921-587e-9d13-735559743fc6.html; *What's on TAP*, WHOOPING CRANE CONSERVATION ASS'N, <http://whoopingcrane.com/whats-on-tap/> (last visited Feb. 18, 2014).

14. See *Letter Surfaces About Plant's Impact on Cranes*, ROCKPORT PILOT (July 15, 2011), http://www.rockportpilot.com/news/article_bc612f1d-4e70-541c-81fd-7a10f54ff748.html.

15. *Aransas Project*, 930 F. Supp. 2d at 725.

cranes.¹⁶ The ESA defines “take” as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”¹⁷

TAP pled a lengthy chain of causation. Water withdrawals authorized by TCEQ created hyper-saline conditions.¹⁸ The hyper-saline conditions reduced the cranes’ food sources and drinking water. The lack of food and freshwater caused the cranes to become emaciated, increasing their susceptibility to disease, predation, and harmful stress behavior.¹⁹ These conditions ultimately led to the deaths of the twenty-three whooping cranes, which are protected under the ESA.²⁰

C. *The Opinion*

The court agreed with the plaintiffs, finding that a “take” under the ESA occurred and ordering TCEQ to apply for an Incidental Take Permit and develop a Habitat Conservation Plan.²¹ The court directed that the plan should require higher inflow volume with bay salinity monitoring.²² Finally, until TCEQ developed the plan, the court prohibited TCEQ from issuing any new or expanded water withdrawal authorizations.²³

Significantly, the trial court rejected *Burford* abstention arguments made by the defendants. Relying on the holding of *Burford v. Sun Oil Co.*,²⁴ the defendants argued that the federal court should abstain from the case given that it raised complex issues of state law and that Texas had a regulatory scheme in place to address the issues. Texas had established a comprehensive scheme for regulating water withdrawals and for determining

16. *See id.*

17. 16 U.S.C. § 1532(19) (2012). “Harm” is defined by regulation to include “significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.” 50 C.F.R. § 17.3 (2012).

18. *Aransas Project*, 930 F. Supp. 2d at 725.

19. *Id.*

20. *Id.*

21. *Id.* at 788–89. The defendants appealed the decision to the Fifth Circuit Court of Appeals and sought an emergency stay of the injunctive relief requirements, which the Fifth Circuit granted. The appeal has been briefed and argued, but no opinion has been issued by the court as of December 27, 2013.

22. *Id.* at 778.

23. *Id.* at 789.

24. 319 U.S. 315 (1943).

appropriate environmental flows for its rivers. The court rejected the *Burford* arguments, explaining that although the state framework could determine the amount of freshwater inflows needed to maintain the health of the rivers, it had no teeth and thus, it could not ensure that such determinations would be enforced.²⁵ The court found that the state program was not protective of the whooping cranes and would only apply to future permitting decisions, rather than revisiting previously issued permits.²⁶ Further, the court found it had the power to require TCEQ to use state law provisions governing water withdrawal permitting, such as revoking previously issued water rights and accounting for riparian rights.²⁷

Putting aside the question of whether there was adequate scientific evidence to support the finding that a “take” occurred or the causal connection between decreased water flows and harm to the whooping cranes,²⁸ the case sets a precedent for federal courts to use the Endangered Species Act to trump state and local decisions relating to water management, including permitting and allocations. If and when water resources become scarce because of drought, pollution, or over-allocation, the ESA could be used as a water allocation tool, placing endangered and threatened species above all other uses, including energy projects. Moreover, based on this court’s decision, the federal government could assume oversight responsibility for state and local water allocation decisions. And, although neither the complaint, nor the opinion mentions the proposed Exelon nuclear project, it is clear that the plans for the plant were driving the litigation.²⁹ The decision in this case illustrates how water allocation issues can control decisions relating to energy projects.

25. *Aransas Project*, 930 F. Supp. 2d at 731–32, 735–36, 743–44.

26. *Id.* at 736–37, 743–44.

27. *Id.* at 737.

28. See generally LEE WILSON, ANALYSIS OF THE SCIENCE: THE WHOOPING CRANE DECISION, *THE ARANSAS PROJECT V. SHAW* (2013) (prepared for the Texas Public Policy Foundation), available at <http://www.texaspolicy.com/sites/default/files/documents/2013-05-RR06-AnalysisofScienceWhoopingCraneDecision-ACEE-Wilson-White.pdf>.

29. See Paul Seals, *Whooping Cranes and Texas Water Rights—A Fight’s a Brewing*, AM. COLL. OF ENVTL. LAW. (Mar. 18, 2010), <http://www.acoel.org/post/2010/03/18/Whooping-Cranes-and-Texas-Water-Rights-A-Fights-A-Brewing.aspx>.

II. *HEAL UTAH V. KANE COUNTY WATER CONSERVANCY DISTRICT*

A. *Background*

In Utah, Blue Castle Holdings proposed to build a twin reactor nuclear powered electrical generating plant near Emery County.³⁰ Before construction began, Blue Castle proposed to lease 29,600 acre feet of water from the Kane County Water Conservancy District and 24,000 acre feet of water from the San Juan Water Conservancy District.³¹ The water in both leases had originally been approved for use in the operation of steam power generation at coal-fired power plants.³² Those plants were never constructed. Thus, Blue Castle filed to transfer the water in those leases to its proposed nuclear power plant. The Utah State Engineer approved the change applications, including a request to move the original points of diversion so that the water could be used by Blue Castle's proposed nuclear power plant.³³

B. *The Lawsuit*

HEAL Utah, a non-profit organization focused on environmental issues affecting Utah, filed suit challenging the State Engineer's decision.³⁴ Under Utah state law, the State Engineer authorizes the right to withdraw water for a given use. The Utah State Code outlines the criteria that must be considered in making these determinations, which include: (1) whether there is unappropriated water in the proposed source; (2) whether the proposed use will impair existing rights or interfere with the more beneficial use of the water; (3) whether the proposed plan is physically and economically feasible, and is not detrimental to the public welfare; (4) whether the applicant has the financial ability to complete the proposed works; and (5) whether the application

30. *HEAL Utah v. Kane Cnty. Water Conservancy Dist.*, No. 120700009, at 1 (7th Jud. Dist. Ct. for Emery Cnty., Utah, Nov. 27, 2013).

31. *Id.* at 1–2.

32. *Id.* at 2.

33. *Id.* at 2–3; see UTAH CODE ANN. § 73-3-3(4)(a) (West 2013) (“A person entitled to use water may not make a change unless the state engineer approves the change application.”).

34. *HEAL Utah*, No. 120700009, at 3.

was filed in good faith and not for purposes of speculation or monopoly.³⁵

HEAL Utah's challenge centered around two issues: whether the proposed withdrawal would unreasonably impact the environment and endangered species within the impacted water bodies and whether there was sufficient evidence that the Blue Castle project was financially feasible.³⁶

C. *The Opinion*

The Utah state trial court upheld the State Engineer's decision, explaining that the change application met all of the statutory factors.³⁷ While the application allowed Blue Castle to construct the necessary infrastructure for the water withdrawal and to use the water as described in the change application, there were numerous additional state and federal approvals that would need to be satisfied before the water could be diverted.³⁸

The court discussed the other environmental reviews that would need to be completed by federal agencies before the plant could become a reality, including an analysis of whether the water required for the project would adversely impact the natural stream environment and protected fish.³⁹ If the environmental impacts are too great, the project cannot go forward and the water rights cannot be used. HEAL Utah argued that by deferring to federal review and approval, the State Engineer's decision effectively ceded state water right determinations to the federal government.⁴⁰ The group asserted that the state, as the entity charged with managing water quality, was the appropriate agency to make such determinations and should not rely on the federal government to do so.

Energy needs were an important component of the court's analysis. The court explained that power generation is an important segment of Utah's economy, supporting thousands of jobs

35. UTAH CODE ANN. § 73-3-8 (West 2013).

36. *HEAL Utah*, No. 120700009, at 13, 19.

37. *Id.* at 6-7.

38. *Id.* at 25-26.

39. *Id.* at 19-20.

40. Complaint at 3, *HEAL Utah*, No. 120700009, available at http://uraniumwatch.org/bluecastle_waterrights/PlaintiffComplaint_KCWCD.120327.pdf.

and providing electricity at reasonable cost to the public and industry. From 1985 to 2005, power generation provided more tax revenue to the state than any other segment of the economy. The Governor and Legislature have stated that providing for Utah's growing energy needs is a priority. The Governor has challenged power producers in Utah to develop generation resources that will allow Utah to meet its projected power need and also export 25% of its power production.⁴¹

Thus, the court determined that the change application would not adversely impact other beneficial uses; even if it did, the court appeared to hold energy needs above other beneficial uses.

The court's analysis also weighed the impacts of the proposed nuclear plant as compared to other potential power sources. For coal and natural gas, the court noted their adverse environmental impacts, which include carbon emissions and visual pollution.⁴² The court also noted the high cost of solar and wind projects, in addition to the fact that neither are good options for providing baseline power.⁴³

As in *Aransas Project*, the plaintiffs in *HEAL Utah* raised concerns about changes to the natural stream environment and the impact on endangered species. Four species of endangered fish were found in the affected streams, as well as critical habitat for those fish.⁴⁴ The State Engineer acknowledged that he did not have sufficient information to evaluate such impacts and deferred to future environmental analyses that would be provided as part of the reviews by the Nuclear Regulatory Commission and the U.S. Fish and Wildlife Service.⁴⁵

III. IMPLICATIONS OF DECISIONS

Federal laws and policies seek energy independence for the United States, as well as development of alternative energy sources. But there are also federal laws and policies seeking to protect endangered species and the environment. Water is a critical component of both. Many articles and much commentary ad-

41. *HEAL Utah*, No. 120700009, at 11.

42. *Id.* at 14–15.

43. *Id.*

44. *Id.* at 19.

45. *Id.* at 19–22.

dress whether the federal government must defer to state water allocation decisions.⁴⁶ *Aransas Project* and *HEAL Utah* provide a comparison on how each approach might be used. Both cases also highlight an equally important question about whether one federal goal (protection of the environment) must defer to the other (energy independence).

At the end of the day, water allocations and their impacts on receiving streams are appropriate considerations in the permitting process for energy projects. The question is whether the Endangered Species Act or other federal environmental reviews are the best tools for conducting that analysis. The ESA analysis focuses solely on protection of endangered and threatened species, over and above any other need. Moreover, in the water allocation context, the link between water allocation decisions and actual impacts to a given species is often attenuated, with many other factors to consider. The broad brush response may be too imprecise a tool for the complexity associated with the ecology of a river system and the state and local policies that come into play when determining how to best manage it.

In the absence of clear federal policy or direction about how to reconcile these competing interests, it will be piecemeal case law that dictates whether and how water will be provided for energy projects during water shortages. The cases described herein highlight how environmental groups can use state or federal procedures relating to water allocation as a means to influence energy projects.

The cases also highlight the difficult policy decisions inherent to water allocation. In *Aransas Project*, environmentalists were seeking federal involvement to oversee and reallocate water.⁴⁷ The defendants in that case were citing state authority to make water allocation and withdrawal determinations, and protesting federal involvement in traditionally state and local interests.⁴⁸ By contrast, in *HEAL Utah*, the environmental groups decried the use of federal statutes to address potential impacts to the natural

46. See, e.g., Benson, *supra* note 8, at 306 n.450 (citing Jennie L. Bricker & David E. Filippi, *Endangered Species Act Enforcement and Western Water Law*, 30 ENVTL. L. 735, 750–64 (2000); Holly Doremus, *Water, Population Growth, and the Endangered Species Act in the West*, 72 U. COLO. L. REV. 361, 379–94 (2001); A. Dan Tarlock, *The Endangered Species Act and Western Water Rights*, 20 LAND & WATER L. REV. 1, 13–26 (1985)).

47. *Aransas Project v. Shaw*, 930 F. Supp. 2d 716, 725–26, 737 (S.D. Tex. 2013).

48. *Id.* at 733.

stream environment and protected fish, seeking instead to require the state to address those issues as part of its water allocation responsibilities.⁴⁹ The defendants in *HEAL Utah* argued that allocation decisions could be made independently of the environmental impacts, which would be addressed through the ESA, National Environmental Policy Act, and other federal reviews.⁵⁰ Allocation is a state function; the broader environmental impact question is one of federal law.

Note in both cases, that the water had previously been allocated. The cases involved a reallocation of water already dedicated to power or industrial projects, rather than brand new appropriations.⁵¹ The new energy project provided an opportunity to revisit previous appropriations. While a state court may be more reluctant to effectively rescind previously issued water rights, the federal court in Texas was less concerned about the implications of voiding prior appropriations when presented with evidence of over-allocation impacting endangered species.

The federal-state water framework is a confusing web that may entangle energy projects. Eventually, federal guidance needs to outline the boundaries of each, and how they should apply in the context of federal energy policy and related project approvals.

CONCLUSION

Water and energy are interdependent, and both are central to the health of the United States' economy and environment. While the federal government has regulatory oversight over the environmental impacts of projects, including impacts on endangered species and water resources, the prioritization and allocation of water rights has traditionally been reserved to the states. As the federal government studies opportunities for integrating energy needs into water permitting and water needs into the permitting and review of energy projects, the federal-state water supply framework must also be considered. In the meantime, federal and state courts are already creating law about how water and energy needs can be coordinated.

49. See *supra* note 39 and accompanying text.

50. *HEAL Utah*, No. 120700009, at 19–22.

51. *Aransas Project*, 930 F. Supp. 2d at 736–37; *HEAL Utah*, No. 120700009, at 2.

At the federal level, the Endangered Species Act has been used to protect endangered species at the expense of power projects, economic development, and state allocation decisions. At the state level, economic needs, energy independence, and exploration of alternative energy sources may factor more heavily in an evaluation of water withdrawal permitting decisions.

More guidance is needed on the concept of environmental flows, and how this concept can and should be used in water intensive projects such as power plants. The federal government can likely provide the best guidance on how these issues should be addressed, but it must do so in a manner that is protective of state water and property rights.