LECTURE

ADELL L. AMOS*

Dam Removal and Hydropower Production in the United States–Ushering In a New Era

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***BALANCING ENERGY AND THE ENVIRONMENT: EXAMINING TRENDS IN THE PRODUCTION AND REGULATION OF ELECTRICTY* SYMPOSIUM**

My talk today concerns balancing hydropower production and dam removal in the United States and ushering in, what many commentators believe represents, a new era in hydropower and dam development in the United States. I hope after this talk you will be able to understand the basics of hydropower production in the United States and, in particular, the legal and the regulatory structures for the various kinds of hydropower facilities that we have in the United States. This legal and regulatory structure will help orient you as I move on to describe some current examples of dam removal projects. It is this very legal and regulatory structure that provides the framework in which dam removal has been realized, and even

* Associate Dean for Academic Affairs, University of Oregon School of Law, Associate Professor and Dean's Distinguished Faculty Fellow. This lecture and the subsequent Article substantially benefited from the superb research assistance of Lena McClelland and Christopher R. Swensen. I want to thank each of them for their hard work under very tight deadlines. I also appreciate the work of the editors at the *Journal of Environmental Law and Litigation*, particularly Lauren Johansen, Brian Hennes, Shannon McCabe, Matthew Vickery, and Kristina Schmunk not only for organizing a thought-provoking and well-planned symposium but also for their editorial work on the transcript. This work is much improved from all those efforts and any mistakes remain mine. Lastly, as always, I want to thank Jill Elizabeth at the University of Oregon School of Law for her patient, careful, and insightful editorial assistance.

promoted, in the United States. Finally, I want to spend some time understanding the role of the Federal Energy Regulatory Commission (FERC) relicensing process and in particular its relationship to river restoration. I hope to do all this in the context of talking about the proposed dam removal in the Klamath Basin.

The Klamath Basin proposal serves as a useful example of the impact that the FERC process can have on opening up the possibility of dam removal in a basin. As I hope to demonstrate, the dynamics on federally-licensed projects like the Klamath Hydroelectric project look quite different than the situation at state or federally owned and managed reservoirs, like the Grand Coulee on the Columbia River or the Hoover and Glen Canyon dams on the Colorado River—facilities that are not subject to FERC's authority under the Federal Power Act (FPA).

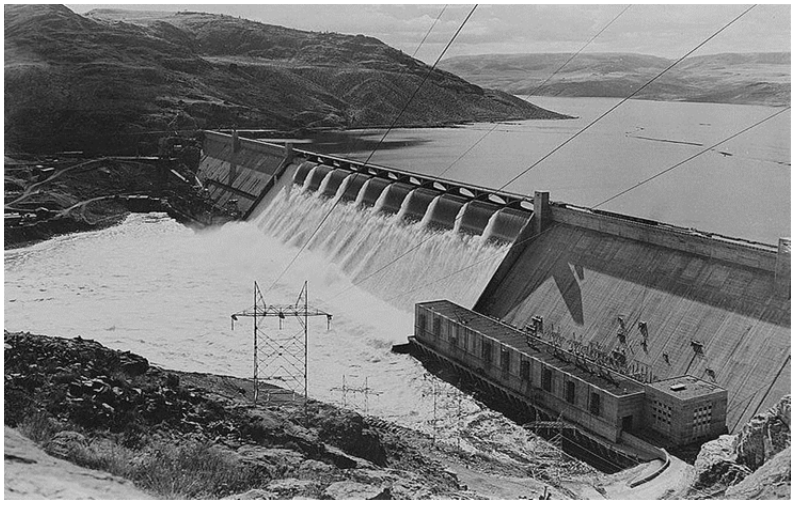
The FPA is one of my favorite statutes to teach. I particularly like to teach the FPA to law students who hope to work saving rivers because I am not sure they believe before they come to law school that a statute called the Federal Power Act might be one of the keys to restoring western rivers. There is this wonderful moment of understanding how the law and regulatory structure can have these interesting twists and turns. I think the story of the FPA is that kind of story.

To begin, let's talk briefly about water as a source of power. Hydropower is energy derived from falling water and it has roots deep in American culture and history, beginning with the advent of the Industrial Revolution. Our use of water to generate power began with the simple water mill: water turns a paddlewheel attached to a driveshaft that is attached to machinery enabling the production of a product or energy to power the making of a product. Our technology for harnessing water power shifts, at the time of the Industrial Revolution, to mill dams that are used to create a headwater, or a volume of water held back by a dam that holds kinetic energy. This captured water creates more falling water, more capacity to store energy, and more control over the production and timing of that energy. Many early dam removal projects in the United States that are outside of FERC's jurisdiction occurred in the east around these mill dams facilities that were built during the Industrial Revolution and have since outlived their economic usefulness. These milldams (facilities that may or may not be regulated by federal or state law) are often privately owned. My talk today will not focus on these facilities, but there are many interesting stories about how dam

removal has been implemented on these types of structures. The focus of my talk today involves facilities that are permitted by FERC under the FPA.

After mill dams, the next major technical development in water power comes with the development of the turbine. The turbine ultimately enhanced our ability to use water to generate electricity and brought us the modern hydropower energy industry that we know today, especially here in the Pacific Northwest. Figure 1 below is an image of the Grand Coulee Dam, the largest hydropower production facility in the United States.

Figure 1: Grand Coulee Dam[1]



The advent of the turbine created a landscape where we could develop a significant source of power in the United States that was, and is, touted as a clean, green, low-carbon footprint source of energy. Today, as was the case even at the time that hydropower was gaining prominence, we disagree about whether and to what extent hydropower is clean, whether it is green, and about its carbon footprint. Despite these debates, it is hard to discount the comparative advantages of hydropower in terms of its carbon footprint versus other forms of energy, particularly coal. Understanding hydropower's

1 Photograph of Grand Coulee Dam, U.S. Bureau of Reclamation, *Grand Coulee Dam*, 1942, *available at* http://commons.wikimedia.org/wiki/File:Grand_Coulee_Dam_no_forebay.jpg.

significance in this energy context helps to interpret some of the dynamics associated with the decision-making process around dam removal.

Hydropower has its advantages as an energy source, and these advantages are well documented.[2] Hydropower is often represented as cost effective and many of us in the Northwest enjoy cheap power as a result of this hydropower industry.[3] In addition to its advantages in terms of being clean and green, hydropower is renewable in the sense that it is dependent on the hydrologic cycle each year.

Based on the amount of precipitation that falls, we store water in reservoirs for energy production. Therefore, as a result of this storage capacity, hydropower is available on demand. This makes hydropower an extremely important source of power to provide immediate generation to fill in when other renewable sources are more intermittent in their generation capacity, such as solar and wind power. With hydropower, a utility can put together an energy portfolio in which hydropower fills the intermittent spaces where solar or wind might not be available. As a result, hydropower helps to make renewable sources like solar and wind a more reliable and consistent source of energy.[4]

Of course, hydropower also comes with well-documented disadvantages and downsides.[5] The reliability of hydropower is dependent on hydrologic conditions and climate. The Glen Canyon Dam—which is one of the largest federally owned hydropower facilities—has been plagued with issues because of the changing hydrologic conditions in the Colorado River Basin, namely a significant reduction in precipitation, increased drought cycles, impacts from climate change, and demands on the water from population growth.[6] Because of changing hydrologic patterns, the

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2 *See, e.g.*, Bonneville Power Admin., *Hydropower in the Northwest*, BPA.GOV, http://www.bpa.gov/news/AboutUs/75thAnniversary/Pages/Hydropower-in-the-Northwest.aspx (last visited Mar. 5, 2014).

3 *See, e.g.*, *id.*

4 *See id.*

5 *See, e.g.*, *Environmental Impacts of Hydroelectric Power*, UNION OF CONCERNED SCIENTISTS, http://www.ucsusa.org/clean_energy/our-energy-choices/renewable-energy/environmental-impacts-hydroelectric-power.html (last updated Mar. 5, 2013).

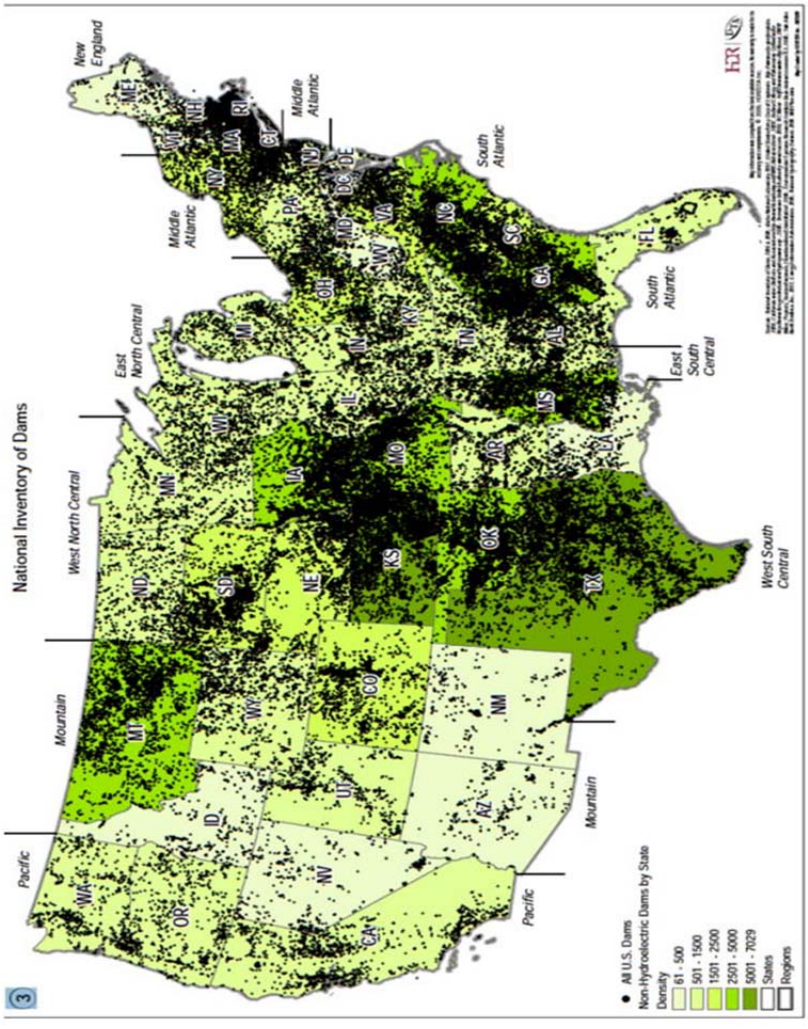
6 Jim Carlton, *Decade of Drought Threatens West*, WALL ST. J., Aug. 16, 2013, at A1; SOUTHWEST CLIMATE ALLIANCE, ASSESSMENT OF CLIMATE CHANGE IN THE SOUTHWEST UNITED STATES: A REPORT PREPARED FOR THE NATIONAL CLIMATE ASSESSMENT 248–51 (Gregg Garfin et al. eds., 2013), *available at* http://swccar.org/sites/all/themes/files/SW-NCA-color-FINALweb.pdf; *see also* Katie Valentine, *The*

dynamics and justification of some of these facilities have changed dramatically. In particular, it has raised questions about whether there will be a time when the water levels in the reservoir will fall below the hydropower intakes, thus impairing the capacity of the facility to produce electricity. One of the downsides, or risks, of hydropower is that it is very dependent on the hydrologic cycle and climate. In a changing climate we may see significant impacts on hydropower capacity at certain facilities.

Another downside to hydropower is that we are now at capacity in terms of large, highly productive hydropower facilities. Because the best reservoir sites have been developed, particularly in the western United States, the quantities of hydropower currently available represents much of the capacity of the system on a large scale. Most of the canyons that are the most susceptible to generating the kind of storage capacity needed for productive hydropower are already developed. As a result, there are very few sites left that show the kind of return on investment that the canyons of the West once did. To the extent that there are undeveloped sites, there are now often separate protections in place to prevent the development of hydropower. Dams also come with long-term maintenance and safety issues. These dams are massively engineered structures and they age just like any infrastructure. One of the costs over the long term is maintaining the structure and safety of our existing facilities. This is part of the analysis in a FERC relicensing process. Lastly, we are all very familiar with the significant ecological impacts of dams and the dramatic changes and alterations that dams have made on our natural river systems. The extent of existing hydropower development in the United States today results in Figure 2 below.

Water Gap: Interior Department Warns of Water Shortages in the Colorado River Basin Due to Climate Change, CLIMATE PROGRESS (Dec. 17, 2012, 10:30 AM), http://thinkprogress.org/climate/2012/12/17/1343441/the-water-gap-interior-department-warns-of-water-shortages-in-the-colorado-river-basin-due-to-climate-change/.

Figure 2: Map of Existing Hydropower Development in the United States[7]



[7] Digital Image: Map Depicting All U.S. Dams and the Density of Non-Hydroelectric Dams by State (HDR/DTA Inc. 2009) (compiling data from U.S. ARMY CORPS OF ENGINEERS, NATIONAL INVENTORY OF DAMS 2006) (on file with author); *see also* THE H. JOHN HEINZ III CENTER FOR SCIENCE, ECONOMICS AND THE ENVIRONMENT, DAM REMOVAL: SCIENCE AND DECISION MAKING 32 fig.1.8 (2002).

The above map represents the inventory of dams in the United States. Most reports estimate that there are between 75,000 and 76,000 dams in the United States.[8] Each black dot represents one of these approximately 75,000 facilities. The grey shading represents non-hydroelectric dams. This inventory of dams includes all of dams in the United States, even those that do not generate hydroelectric power. You can get a sense of the concentrations of the non-hydroelectric dams with the darker grey states having the most non-hydro dams. The lighter grey states have fewer non-hydropower dams and, as a result, have the greatest concentration of hydroelectric facilities.

We have dammed most rivers and we have a tremendous number of facilities in our riverine ecosystems in the United States. It is in this context that the coordinated effort to pursue dam removal has developed. According to the non-profit advocacy group American River's data from 2012, we have removed a total of about 1,150 of the approximately 75,000 dams that are represented in this map.[9] Just since 1999, 593 of those dams have been removed, meaning that the last fifteen years have represented well over half of the dam removal projects thus far.[10]

This data demonstrates the new era that I refer to in this presentation.[11] While the vast majority of dams in the United States are still in place, we are ushering in a new attitude and approach to dams that recognizes many of these facilities need to be evaluated for decommissioning and removal. These facilities largely fall into two categories, with some exceptions: (1) the small, privately owned, mill dams that may or may not be regulated under state and federal law; and, (2) the second category, which is the focus on today, the FERC-licensed hydropower facilities governed by the FPA.

Before we get into the details of dam decommissioning and removal under the FPA, I want to describe the specific purposes for which we have built dams in the United States.

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8 *See* THE H. JOHN HEINZ III CENTER FOR SCIENCE, *supra* note 7; *see also Questions About Removing Dams*, AMERICAN RIVERS, http://www.americanrivers.org/initiatives/dams/faqs/ (last visited Mar. 5, 2014).

9 AMERICAN RIVERS, *supra* note 8.

10 AMERICAN RIVERS, 63 DAMS REMOVED TO RESTORE RIVERS IN 2012 (2012), *available at* http://www.americanrivers.org/assets/pdfs/dam-removal-docs/dams-removed-1998-to-2012.pdf.

11 *See id.*

Table 1: Primary Purposes of American Dams[12]

Table 1.2 Primary Purposes of American Dams[a]

Primary Purpose	Number of Dams
Recreation	26,817
Fire and farm ponds	12,532
Flood control	10,971
Water supply	7,293
Irrigation	7,223
Tailings and waste	6,756
Hydroelectric	2,259
Navigation	226
Undetermined	1,110
Total	75,187

Source: Data from Federal Emergency Management Agency and U.S. Army Corps of Engineers (1996).
[a] Many structures are multipurpose.

The data from Table 1 is interesting because it shows that so many facilities are multi-purpose. Table 1 provides a good sense of the number of facilities, about 2,259, that are hydroelectric and regulated under the FPA, except for those dams that are owned and operated by state or federal governments. Table 2 shows the ownership patterns of dams in the United States.

12 THE H. JOHN HEINZ III CENTER FOR SCIENCE, *supra* note 7, at 35 tbl.1.2.

Table 2: Ownership of American Dams[13]

Table 1.1 Ownership of American Dams

Owner	Number	Percentage of Total
Private	43,661	58.1
Local	12,859	17.1
State	3,680	4.9
Federal	2,209	2.9
Public utility	1,659	2.2
Undetermined[a]	11,119	14.8
Total	75,187	100.0

Source: Data from Federal Emergency Management Agency and U.S. Army Corps of Engineers (1996).
[a] Abandoned or of questionable ownership.

Note that the number of dams in private ownership includes many dams that have FERC licenses. This table also reflects that we have a significant number of dams that are not licensed by FERC and are in private ownership—these are largely the small milldams I mentioned earlier. The last group, represented by several categories, includes those facilities that are in local ownership, state or federal ownership, owned by a public utility, and those that are undetermined. It is worth noting that there are a fair number of abandoned and undetermined dam sites in the United States. These are often small, abandoned facilities where ownership and control is not clear.[14]

If we consider the data in these two tables together, we get an interesting perspective on the legal and regulatory structure that applies to the various facilities. There are three important and functional categories of dams from a legal perspective: (1) federally owned and operated facilities, (2) federally and state licensed facilities that are in private ownership, and (3) privately owned and unlicensed facilities. These categories are significant because they ultimately define the regulatory and legal structure that can lead (or in some cases not lead) to decommissioning and dam removal. More

13 *Id.* at 31 tbl.1.1.

14 *Id.*

specifically, those dams that are privately owned and licensed by FERC, category (2) on the list above, benefit from the established relicensing process which provides the opportunity to reevaluate the facility. None of the other categories have an established regulatory process that creates an opportunity to facilitate this kind of reevaluation.

Figure 3: Regulatory and Legal Structure for Dams Based on Ownership.[15]

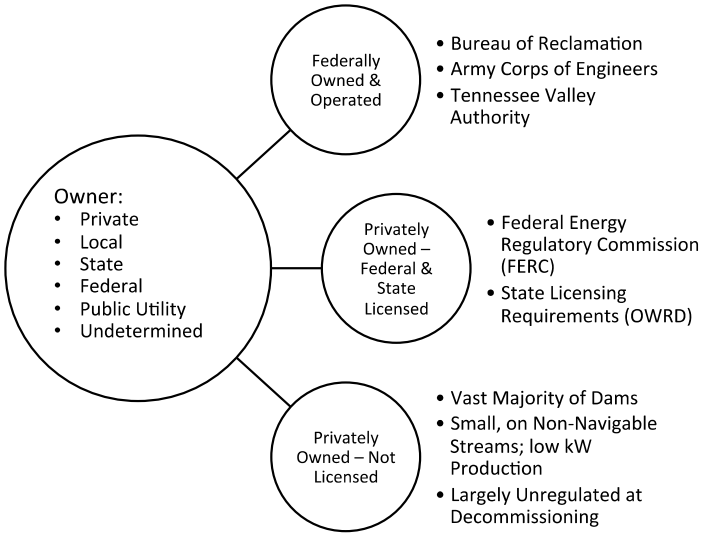

Figure 3 demonstrates the difference between these categories, particularly the distinction between federally owned and operated versus federal and state licensed facilities. Many of the large dams that we know from the Columbia River, the Colorado River, the Snake River—major river systems in the United States—are federally owned and operated. These dams are owned and operated by the Bureau of Reclamation and the Army Corps of Engineers and are the most significant dams in the western United States. Also there are entities like the Tennessee Valley Authority that own and operate dams in a particular region. These dams are creatures of congressional authority and are managed as Congress delegates to various federal agencies, typically the Bureau of Reclamation or the U.S. Army

15 Image credit to Christopher R. Swensen and Lena McClelland for their work in preparing this image for publication.

Corps of Engineers. These dams are not subject to the same regulatory landscape as FPA licensed dams and state licensed dams. FPA licensed facilities are subject to FERC's jurisdiction through the licensing and, most importantly, relicensing process. It is this FPA-created relicensing process that allows stakeholders and society at large to revisit and reevaluate these facilities. Congressionally created facilities managed by the Bureau of Reclamation, the Army Corps of Engineers, and other federal agencies, have no built-in mechanism for reevaluation of the existence of the project. There is no "relicensing" process or provision for automatically decommissioning facilities like we have for FERC licensed facilities.

By contrast, the FPA as written and amended by Congress, imagines from the beginning that these facilities will need to be reevaluated and reconsidered. The possibility of reconsidering federally owned facilities, as opposed to federally licensed facilities, rests with Congress or the agency that operates the facility and the incentives are rarely present to engage in any sort of reevaluation. For federally owned facilities there is simply no automatic mechanism by which we step back and ask whether it still makes sense to maintain this facility such as: is it still cost effective, does it still make sense, is this still a good business decision, is this the right ecological decision, and associated questions. For the federally licensed facilities, we have, through FERC and the FPA, the opportunity to revisit these questions. This talk suggests that without the structure and function of the FPA we would not have seen progress in terms of dam decommissioning and removal in the United States.

Let's turn now to an overview of the FERC relicensing process. There are three examples of dams that are famous in the Northwest. They are proof of the new era of dam decommissioning and removal. All of these removals have occurred in the context of the administrative and regulatory structure that FERC administers. Once we look at these three examples, we will then turn to the Klamath River Basin and I will offer a set of observations regarding why I think the FPA is so important, and the key legal and regulatory features of this new era, particularly for the Klamath Basin.

The FPA applies where a facility is located on a navigable waterway of the United States. The students in my Water Law class are often frustrated by the word 'navigable' because what it means in the context of FERC is not what it means in the context of the Clean Water Act or what it means in the context of navigability for state

title. As I say in Water Law, "never has the law asked one word to do so much."

For the purposes of FERC jurisdiction the FPA's definition of navigability includes: (1) facilities occupying lands of the United States, (2) facilities using surplus water or power from a government dam (one of those federally owned dams), (3) facilities located on a body of water over which Congress has commerce clause jurisdiction, and (4) projects that affect interstate commerce.[16]

The FPA establishes the jurisdiction of FERC over private entities that want to generate hydropower at a certain threshold on a navigable waterway in the United States. For those that fall within this jurisdiction, the FPA has a series of provisions that set the stage for being able to consider things like the ecosystem in the process of licensing and relicensing. In particular, Section 4 of the FPA requires that a license be in the public interest.[17] That public interest requirement includes consideration of the ecosystem such as the benefits and detriments associated with a facility. In addition, the FPA imagines that every license will be for limited time duration.[18] There is recognition that a license is for a particular period of time and that there will be a moment in time when we will reexamine the license. We simply do not have this kind of established, automatically triggered process for re-evaluation with regard to non-FERC facilities.

Section 10 of the FPA requires that a license be "best adapted to a comprehensive plan for improving or developing a waterway" or for other beneficial public uses.[19] This comprehensive plan language and public interest language was expanded upon in a set of 1986 amendments that provided that *equal consideration* be given to power development, energy conservation, fish and wildlife, recreational opportunities, and the preservation of other aspects of environmental quality.[20] One can begin to see the statutory language and framework through which things like river restoration and ecosystem protection are recognized even though the statute allows for licenses to dam rivers for hydropower facilities. In addition, the FPA requires

16 The Federal Power Act, 16 U.S.C. § 796 (2012).

17 *Id.* § 797(e).

18 *Id.* § 799.

19 *Id.* § 803(a)(1)(19); John D. Echeverria, *The Electric Consumers Protection Act of 1986*, 8 ENERGY L.J. 61, 70–72 (1987).

20 Electric Consumers Protection Act of 1986, Pub. L. No. 99-495, § 3, 100 Stat. 1243, 1243 (1986).

consideration of cumulative impacts. This analysis also allows for larger impacts of the project to be considered and helps lay the foundation for environmental considerations. Finally, and perhaps the most significant mechanism in this relicensing process, is the consideration of ecosystem values in the condition and prescription authority embedded in FERC. These three fundamental statutory constructs—equal consideration to a set of environmental values, analysis of cumulative impacts, and the condition and prescription authority—make the FPA a powerful river restoration tool.

What do I mean by condition and prescription authority? For those in the room who have lived in the land of FPA dams, these are very familiar provisions. In fact, lawyers who practice in this area talk about 10(a) recommendations,[21] 4(a) mandatory conditions,[22] section 18 fishway prescriptions,[23] and 10(j) fishway prescriptions[24] all the time. This condition and prescription authority forms the backbone of the substantive considerations that come into play when a dam is being licensed or relicensed. These authorities are vested with agencies other than FERC. Giving regulatory power to an agency other than the one charged with granting the license is remarkable. This vesting of authorities, some mandatory, with another agency, or in this case agencies, creates a process that opens up possibilities and lines of inquiry and work against the oft-quoted dynamics of agency capture. I know it is hard to get excited on a Saturday morning about a regulatory process, but this one is worth your attention, I promise. The 10(a) recommendations are general recommendations that can come in from the parties, other resource agencies in the federal government, including the Park Service, the Fish and Wildlife Service, and NOAA Fisheries, and other entities.[25] The FPA requires that these 10(a) recommendations become part of the analysis, of equal consideration to other resources.[26] In this very simple way, the FERC licensing and relicensing process opens and creates a way in which entities other than FERC or the licensee can make

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21 16 U.S.C. § 803(a).

22 *Id.* § 797(e).

23 *Id.* § 811.

24 *Id.* § 803(j).

25 *Id.* § 803(a)(2)(A)–(B); *see* David N. Allen, *The Klamath Hydroelectric Settlement Agreement: Federal Law, Local Compromise, and the Largest Dam Removal Project in History*, 16 HASTINGS W.-NW. J. ENVTL. L. & POL'Y 427, 433–34 (2010).

26 16 U.S.C. § 803(a)(2)(B); *see also id.* § 797(e); *id.* § 803(a)(1).

recommendations and provide data and input. This data and input must be a part of the analysis and bears on a determination that FERC has to make in the context of giving equal consideration to all of the factors discussed earlier. With regard to the 10(a) recommendations, however, FERC has plenty of discretion to accept or deny those recommendations.[27] FERC completes the analysis and its decision is ultimately subject to review using an arbitrary and capricious standard of review. Thus, FERC maintains considerable discretion with regard to 10(a) recommendations. With the remaining condition and prescription authority, FERC's level of discretion changes dramatically.

Section 4(e) sets forth a process for developing *mandatory* conditions on the license. If there are federal reservations of land—such as park units managed by the Park Service, Indian lands managed by the Tribes and the Bureau of Indian Affairs (BIA), or Forest Service lands—on which part of the project is located, the agencies responsible for managing those lands can submit mandatory conditions on the license.[28] Not FERC, not the licensee, but the agencies responsible for managing those lands submit the mandatory conditions. When the licensee applies to get their license or they apply to be relicensed, these non-FERC land-managing agencies can submit mandatory conditions on the license. Under the FPA, FERC *must* accept these conditions; there is no discretion to deny the conditions. If the license applicant takes issue with these conditions, they must either appeal to the court or, under the Energy Policy Act of 2005, ask for a hearing around disputed material facts in those recommendations.[29] This is an astounding provision; it gives another set of federal agencies the power to submit mandatory conditions on a license that FERC has no discretion to deny even though FERC ultimately is the agency with jurisdiction over the license. The dynamics around agency discretion are completely different here and the opportunity for agency capture by the regulated industry is significantly reduced.

Section 18, similar in structure and function, provides for federal fishway prescriptions and gives authority to the Secretaries of Interior and Commerce to require fishway prescriptions that protect fisheries

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27 Allen, *supra* note 25, at 436–37.

28 16 U.S.C. § 797(e).

29 *Id.*; *see also* 43 C.F.R. § 45.21 (2013).

which are impacted by the hydropower project.[30] This provision does not hinge on the existence of federal land within the project. Rather, Section 18 turns on the existence of the fishery resource that is managed by Interior and Commerce. Moreover, section 18 is broader than just a particular species, like the Endangered Species Act (ESA). The ESA operates with regard to listed species but not unlisted species. Section 18 authority is more comprehensive to the fishery rather than being limited to a particular listed species. Section 18 authority relates to a fishery's health and productivity, whether or not that fishery is listed under the Endangered Species Act. It represents the entire fishery, not just those species that have made it through the listing process. Section 18 fishway prescriptions, like 4(e) conditions, are mandatory and FERC has no discretion to deny these prescriptions.[31] The applicant's remedy is through the court or through a hearing made available under the Energy Policy Act.[32]

Finally, we turn to 10(j) fishway prescription authority. This is a mechanism for nonfederal entities—including state fish and game agencies, state environmental quality agencies, the state parks departments, and cities—to submit prescriptions to address fishway.[33] Provided the submitted prescriptions are consistent with the FPA,[34] FERC must adopt them as part of the license. The 10(j) prescription process creates a mechanism through which states play a tremendous role in the FERC licensing and relicensing process. To the extent FERC questions these 10(j) prescriptions, the Ninth Circuit and other courts have provided that FERC must provide expert agency deference to the agencies that have provided these prescriptions.[35] So, even though they are not required to adopt them, they have to provide the kind of deference that we see in administrative law to these

30 16 U.S.C. § 811; Wis. Power & Light Co. v. FERC, 363 F.3d 453, 462–63 (D.C. Cir. 2004).

31 16 U.S.C. § 811 ("The Commission shall require the construction, maintenance, and operation by a licensee at its own expense . . . ."); Am. Rivers v. FERC, 201 F.3d 1186, 1210 (9th Cir. 1999); *Wis. Power & Light Co.*, 363 F.3d at 460.

32 16 U.S.C. § 811.

33 *Id.* § 803(j).

34 *See id.* § 803 (j)(1)–(2).

35 *See Am. Rivers*, 201 F.3d at 1186; Kelley *ex rel.* Mich. Dep't of Natural Res. v. FERC, 96 F.3d 1482, 1486 (D.C. Cir. 1996); City of Oconto Falls v. FERC, 204 F.3d 1154, 1160 (D.C. Cir. 2000); Nat'l Wildlife Fed'n v. FERC, 912 F.2d 1471, 1479–83 (D.C. Cir. 1990).

conditions and prescriptions.[36] 10(j) recommendations represent a mechanism through which many of the state water quality standards are enforced on licensing and relicensing of the FERC facility. The extent to which this authority is fully utilized often depends on a particular state's willingness to fully pursue this authority.

I hope that gives you a sense of how the FPA creates a process that allows for considerations, separate and apart from hydropower production, to enter into the equation. This ultimately means that values associated with our rivers, distinct from the rivers ability to generate hydropower, can enter the evaluative process. Now, this is *not* to say that the pressure to produce hydropower is easy to overcome. Rather, I suggest that this framework at least admits other considerations.

While the push to produce more hydropower cannot be underestimated, it is through these mandatory conditions and prescriptions that the financial viability of a project plays out. If an applicant is applying for a license or a relicense and the amount to alter the project for fish ladders and the release of water for water quality flows or other requirements from these processes becomes too expensive the financial viability of the project from the private applicant's perspective changes. Essentially, the cost of the modification or alteration may make the proposed project no longer viable. Either the project can be redesigned and made viable by taking these environmental values into account, or it cannot. We not only consider this at the point of granting the license, we go through this whole process again on a thirty to fifty year timeframe when we reevaluate the license. It's not even a one-time bite at this apple; we come back to it again and again, although the time frames, thirty to fifty years on the license, make each opportunity very significant in terms of addressing issues. This opportunity to evaluate a project again as circumstances change adds to the power of the FPA. The FPA has set the framework for dam removal in the United States. The FPA establishes the regulatory process under which facilities are being taken out of our rivers.

In 1994, FERC issued a policy statement entitled "Project Decommissioning at Relicensing," and that policy statement generated extreme controversy because it provided that if a project is

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36 *Id.*

not relicensed, for whatever reason, it must be decommissioned.[37] If a relicensing application is denied, the applicant must then go through a decommissioning process—the process of deconstructing a facility that has been operational. Normally—I love the word 'normally'—the commission anticipates ('anticipates' is another great verb), "that the licensee will be responsible for paying the cost (up to a reasonable level) of steps needed to decommission the project, since the licensee created the project and benefitted from its operations."[38] Hopefully you can appreciate the astounding nature of this provision—it means that the cost and the process of decommissioning and taking facilities offline rests with and is related to the work of the licensee and not the government or taxpayers. It is in the context of the larger relicensing process and the Decommissioning Policy that we begin to get a sense of the larger context for some of the Northwest's most significant dam removal projects.

With this foundation, let's look at some specific dam removal projects here in the Northwest that were the result of the relicensing proceedings or related to relicensing proceedings: The Marmot Dam on the Sandy River in Oregon, which was removed in 2007;[39] The Condit Dam where removal started in 2011;[40] and finally, the restoration of the Elwha River with the removal of the Glines Canyon Dam.[41]

The Marmot Dam was part of the Bull Run Hydroelectric Project on the Sandy River, which drains the northwest slopes of Mount Hood.[42] Portland General Electric (PGE) held the FERC license for the Marmot Dam and constructed the dam in 1913.[43] It supplied about twenty-two megawatts of electricity.[44] PGE "decided early in the FERC relicensing process to surrender the license and remove the

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37 Project Decommissioning at Relicensing; Policy Statement, 60 Fed. Reg. 339 (Jan. 4, 1995) (to be codified at 18 C.F.R. pt. 2); *see also* 18 C.F.R. § 2.24 (2013). *Compare* Christine A. Klein, *On Dams and Democracy*, 78 OR. L. REV. 641 (1999), *with* Michael A. Swiger et al., *Paying for the Change: Can the FERC Force Dam Decommissioning at Relicensing?*, 17 ENERGY L.J. 163 (1996).

38 Project Decommissioning at Relicensing; Policy Statement, 60 Fed. Reg. at 346.

39 Michael C. Blumm & Andrew B. Erickson, *Dam Removal in the Pacific Northwest: Lessons for the Nation*, 42 ENVTL. L. 1043, 1048 (2012).

40 *Id.* at 1065–66.

41 *Id.* at 1057–58.

42 *Id.* at 1066–67.

43 *Id.* at 1067.

44 *Id.*

dams voluntarily."[45] I suspect PGE decided this because their lawyers and staff looked at what was going to happen under the condition and prescription authority previously described. There was no way the dam was going to be a viable business model associated with leaving this facility in place. The license was voluntarily surrendered.[46] In 2008, the final steps of the dam removal took place.[47] In 2009, the full cost of complete removal of the dam and the diversion channels was estimated at about $23.7 million.[48] This removal occurred consistent with the 1994 Decommissioning Policy that the licensee pays the costs for removal as the entity that benefited most substantially from the facility.

We find another Northwest example with the proposed removal of the Condit Dam. The Condit Dam was constructed in the early 1900s and created Northwestern Lake on the White Salmon River.[49] The Condit Dam generated about fifteen megawatts of electricity.[50] PacifiCorp held the FERC license for this facility.[51] The dam received its first federal license to operate under the FPA in 1968 when the Supreme Court, facing the question of whether Condit was within FERC's jurisdiction, actually concluded that the FPA reached non-navigable tributaries to navigable waters.[52] In 1996, FERC issued an order requiring PacifiCorp to construct permanent fish passage facilities, making the continued operation of the dam uneconomical.[53] In 1996 there was still a little bit of an open question with regard to whether FERC could issue a license with conditions and prescriptions that rendered the project uneconomical. By 2006, however, the D.C. Circuit held that FERC is not required to issue a license that guarantees the project will be profitable.[54] In 1999, PacifiCorp and the

45 *Id.* at 1068.

46 *Id.*

47 *Id.* at 1071. Video footage of the Marmot Dam removal is available. U.S. Geological Survey, *Marmot Dam Removal, Sandy River, Oregon: Time-Lapse*, YOUTUBE (Dec. 31, 2007), http://www.youtube.com/watch?v=CaNb2wouYUk.

48 Blumm & Erickson, *supra* note 39, at 1070.

49 PACIFICORP, HISTORY OF THE CONDIT HYDROELECTRIC PROJECT 9 (2002), *available at* http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Condit/HAERReport.pdf.

50 Blumm & Erickson, *supra* note 39, at 1060.

51 *Id.* at 1061.

52 *Id.*

53 David H. Becker, *The Challenges of Dam Removal: The History and Lessons of the Condit Dam and Potential Threats from the 2005 Federal Power Act Amendments*, 36 ENVTL. L. 811, 825–26 (2006); Blumm & Erickson, *supra* note 39, at 1062–63.

54 City of Tacoma v. FERC, 460 F.3d 53, 74 (D.C. Cir. 2006).

other parties to the relicensing entered into a settlement agreement that resulted in the decision to remove this facility.[55] This settlement agreement begins to challenge the notion that the licensee bears the cost of removal. We can begin to see another important dynamic at play for the license once conditions and prescriptions result in a project that is uneconomical. At this point in the process, the dynamics for the licensee shifts to trying to negotiate the lowest cost removal possible.

Perhaps the most famous removal project in the Northwest involves the Elwha dams on the Elwha River in Washington. The removal process was a result of, or at least was facilitated by, FERC relicensing.[56] The Glines Canyon Dam, one of the two Elwha dams, was constructed in 1927.[57] Glines Canyon was the second of two dams on the Elwha River associated with this project.[58] It received a fifty-year permit under the FPA in 1926 and as a hydropower facility it and the other Elwha dam generated about twenty-nine megawatts.[59] In 1938, Olympic National Park was created and included within its boundaries Lake Mills and the Glines Canyon Dam.[60] In 1973, the owners of the dam submitted an application to relicense the facility.[61] In 1978, the dam failed a safety inspection.[62] Ultimately, in 1998 there was federal legislation to purchase the Elwha and Glines Canyon dams for $29.5 million and remove both dams.[63] The estimated cost of the purchase and removal of the dams is somewhere between $40 and $60 million[64] and the total restoration effort on the

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55 Blumm & Erickson, *supra* note 39, at 1063. Video footage of the Condit Dam removal is available. *Spectacular Time Lapse Dam "Removal" Video*, NATIONAL GEOGRAPHIC (Oct. 28, 2011), http://video.nationalgeographic.com/video/news/us-condit-dam-breach-vin.

56 Blumm & Erickson, *supra* note 39, at 1047.

57 *Id.* at 1050.

58 *Id.*

59 *Id.*

60 *Id.* at 1052.

61 *Id.* at 1053.

62 *Id.*

63 *Id.* at 1056. *See also* Phillip M. Bender, *Restoring the Elwha, White Salmon, and Rogue Rivers: A Comparison of Dam Removal Proposals in the Pacific Northwest*, 17 J. LAND RESOURCES & ENVTL. L. 189, 227 (1997); John Kendall, *The Elwha Dams, Part 3 (historical series)—Fisheries, Dams Linked in 1980s*, PENINSULA DAILY NEWS, Sept. 13, 2011, http://www.peninsuladailynews.com/article/20110913/NEWS/309139992/0/SEARCH.

64 Blumm & Erickson, *supra* note 39, at 1056.

Elwha watershed is estimated at $324.7 million.[65] This represents the other end of the spectrum from the Condit Dam where the licensee bore the cost. By contrast, Congress, through the federal taxpayer, has funded the removal of these facilities and the restoration of this watershed.

Those are the success stories: success stories from the perspective of situations where the parties have agreed on removal. None of the removals are the result of a federal court decision to eliminate a dam. There have been legal and administrative decisions along the way but these dam removals represent places where an agreement has been reached through the relicensing process, i.e., through the process of taking a second look to evaluate the impacts of these facilities. The Elwha is the largest dam removal to date in the United States.[66] It shrinks in comparison to the proposal that is on the table for the Klamath River basin.[67]

Before talking about Klamath's dam removal, I want to give a little background on this basin. The basin covers southern Oregon and northern California.[68] My entire legal career has played itself out in the Klamath Basin. I started work on this near 2000, at the beginning of my law career.[69] Following law school, I clerked for a judge for a year and then I went to work at the Department of the Interior and they handed me the Klamath file.[70] It was unbelievable to represent the Fish and Wildlife Service in this context. In 2001, for the first time there was a decision in the United States to shut down a Bureau of Reclamation Irrigation project through the operation of the Endangered Species Act and to release flows for an asserted tribal fisheries right.[71] It was a very dramatic year and an awful year for the farmers in the Klamath Irrigation Project. Without water, livelihoods were impacted.[72] The dynamics in the basin were tremendously

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65 *Olympic National Park: Frequently Asked Questions*, NAT'L PARK SERVICE, www.nps.gov/olym/naturescience/elwha-faq.htm (last visited Mar. 6, 2014).

66 Blumm & Erickson, *supra* note 39, at 1098. Video footage of the Elhwa Dam removal is available. Ian Miller, *Time Lapse of the Removal of Elwha Dam, Washington State*, YOUTUBE (July 16, 2013), http://www.youtube.com/watch?v=bUZE7kgXKJc (Imagery Courtesy of the National Park Service).

67 Blumm & Erickson, *supra* note 39, at 1098.

68 Allen, *supra* note 25, at 428–29.

69 Bonnie Henderson, *Watershed Moment*, OREGON Q., Autumn 2012, at 27, *available at* http://www.oregonquarterly.com/autumn2012/autumn2012-digital.html.

70 *Id.*

71 *Id.*

72 *Id.*

difficult for all involved.[73] The center of the dispute was the A Canal, which is the canal that diverts water out of the Link River into the Klamath Irrigation Project.[74] It is hard to even describe what was going on at the A Canal. There was civil disobedience.[75] There were folks who were opening the canal after the Bureau of Reclamation shut it down.[76] At one point, the United States posted U.S. Marshalls at the A Canal to keep it closed.[77] Local law enforcement refused to enforce the closure order on A Canal.[78]

At one point, a locally organized cavalry arrived, which ultimately resulted in what was called "The Bucket Brigade."[79] It was the largest civil demonstration that Klamath Falls has likely ever seen. The Bucket Brigade carried water out of the lake, around the A Headgate, through downtown Klamath Falls and ultimately into the project's canal.[80] People came in from all over the West to participate in the protest associated with the shutdown of this project.[81]

Later in the summer of 2001, then Secretary of the Interior, Gale Norton, reopened the headgate.[82] It was essentially too late for that irrigation season, but her decision was a significant symbolic action regarding the importance of the Project, if not more. But in 2002, under very similar water and hydrologic conditions, a decision was made to provide irrigation water to the project rather than shut the A Headgate down after what happened in 2001.[83] The result of the continued use of A Canal in 2002 was the largest fish kill in U.S. history.[84] One year, the burden fell on the project irrigators and the next year the burden fell on those who rely on the fishery. And again,

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73 *See id.*

74 *Video Security for Canal Farmers That Fought to Use*, N.Y. TIMES, Jan. 2, 2002, http://www.nytimes.com/2002/01/02/us/video-security-for-canal-that-farmers-fought-to-use.html.

75 *Id.*

76 *Id.*

77 *Id.*

78 *Id.*

79 *Id.*

80 HOLLY DOREMUS & A. DAN TARLOCK, WATER WAR IN THE KLAMATH BASIN: MACHO LAW, COMBAT BIOLOGY, AND DIRTY POLITICS 2 (2008).

81 *Id.* at 3–4.

82 *Id.*

83 *Id.*

84 Russ Rymer, *Reuniting a River*, NAT'L GEOGRAPHIC MAG., Dec. 2008, http://ngm.nationalgeographic.com/2008/12/klamath-river/rymer-text.html.

the dynamics in the basin were tremendously difficult, particularly for the tribes and the fishing communities.

During this time there was an ongoing, statewide general stream adjudication where individuals and entities asserted water rights claims.[85] With the adjudication ongoing, there was no decree to enforce in terms of the priority and quantity of the water rights in the basin.[86] The state of Oregon took the position in 2001 that it would not enforce water rights without a decree. And the Basin was facing the assertion of time immemorial senior water rights from the tribes in the basin in both federal and state court.[87] As a result of the 2001 shutdown[88] and the 2002 fish kill,[89] there are lawsuits pending in federal court challenging both of those federal administrative decisions, as well as many other federal and state cases. In 2005, a Fifth Amendment takings litigation was filed on behalf of the water users asserting that the regulatory actions resulted in a taking of their water rights.[90] In the midst of all of this, PacifiCorp started the relicensing process on the four dams that represent the southernmost, lowest blockage to fish passage on the Klamath River, downstream of the Klamath irrigation project.[91]

The Klamath Project, managed by the Bureau of Reclamation, sits in the upper part of the Klamath Basin by Upper Klamath Lake near the town of Klamath Falls while the FERC dams are downstream in the lower reaches of the Basin in California. There are four FERC dams downstream: Iron Gate, Copco I, Copco II, and JC Boyle. These

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85 DOREMUS & TARLOCK, *supra* note 80, at 43; *see also Klamath Basin Adjudication*, KLAMATH COUNTY CIRCUIT CT., http://courts.oregon.gov/Klamath/pages/water.aspx (last visited Mar. 1, 2014).

86 The Oregon Water Resources Department issued a Final Order of Determination for the Klamath River Basin Adjudication to the Klamath County Circuit Court. Water Resources Department, *Klamath River Basin Adjudication*, OREGON.GOV, http://www.oregon.gov/owrd/pages/adj/index.aspx (last visited Apr. 7, 2014).

87 *See* United States v. Oregon, 44 F.3d 758 (9th Cir. 1994); United States v. Adair, 723 F.2d 1394 (9th Cir. 1983). Information and resources for tribal claims in the Klamath Adjudication are available on the Oregon Water Resources Department website. Water Resources Department, *Klamath Adjudication Contested Case Resolution Documents*, OREGON.GOV, http://apps.wrd.state.or.us/apps/wr/klamath_adj/resolution_documents.aspx (last visited Apr. 7, 2014).

88 Klamath Irrigation Dist. v. United States, 635 F.3d 505, 509–10 (Fed. Cir. 2011) (discussing how the original suit began following the 2001 shutdown).

89 Pac. Coast Fed'n of Fishermen's Ass'ns v. U.S. Bureau of Reclamation, 426 F.3d 1082, 1089 (9th Cir. 2005) (discussing how an amended ESA complaint was filed after the 2002 fish kill).

90 Klamath Irrigation Dist. v. United States, 64 Fed. Cl. 328 (2005).

91 Allen, *supra* note 25, at 428–30.

four dams were all subject to the relicensing proceeding. In 2004, there was new scientific data introduced when federal scientists concluded that salmon formerly spawned in the upper basin, upstream of the dams.[92] Based on this new information, in the spring of 2006, federal agencies submitted conditions and prescriptions that called for a different kind of fish passage at these facilities.[93]

During this time, the Energy Policy Act of 2005 was enacted with provisions calling for changes to the relicensing process.[94] Many experts speculated these changes would slow the relicensing process for those trying to remove dams and at worst, would interfere substantively with the results of the relicensing proceeding. They weren't wrong, but in Klamath it had a really different effect, though still significantly time-consuming and resource intensive. The Energy Policy Act created an administrative hearing mechanism that allowed parties to ask for a hearing to challenge the material facts associated with the conditions and prescriptions.[95] PacifiCorp requested a hearing on the conditions and prescriptions submitted by federal agencies on the Klamath Project relicensing application. As a result, FERC convened an administrative proceeding to evaluate the conditions and prescriptions submitted by the agencies.[96] In the administrative proceeding, Judge McKenna upheld twelve of the fourteen conditions and prescriptions that were submitted.[97]

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92 Glen Spain, *Dams, Water Reforms, and Endangered Species in the Klamath Basin*, 22 J. ENVTL. L. & LITIG. 49, 103 n.218 (2007).

93 OFFICE OF ENERGY PROJECTS, FED. ENERGY REGULATORY COMM'N, FINAL ENVIRONMENTAL IMPACT STATEMENT FOR RELICENSING OF THE KLAMATH HYDROELECTRIC PROJECT NO. 2082-027, at § 2.3.1.3, 2-27 (Nov. 16, 2007), *available at* http://www.ferc.gov/industries/hydropower/enviro/eis/2007/11-16-07.asp.

94 Adell Louise Amos, *More Dam Process: Relicensing of Dams and the 2005 Energy Policy Act*, coauthored with Rick Eichstaedt and Rebecca Sherman, 50:6/7 The Advocate: Official Publication of the Idaho State Bar 33, June/July 2007, *available at* http://www2.state.id.us/lsb/advocate_online.html.

95 16 U.S.C. § 811 (2012); Adell Louise Amos, *Hydropower Reform and the Impact of the Energy Policy Act of 2005 on the Klamath Basin: Renewed Optimism or Same Old Song?*, 22 J. ENVTL. L. & LITIG. 1, 11, 13–17 (2007); David N. Allen, *The Klamath Hydroelectric Settlement Agreement: Federal Law, Local Compromise, and the Largest Dam Removal Project in History*, 16 HASTINGS W.-NW. J. ENVTL L. & POL'Y 427, 438 (2010); David H. Becker, *The Challenges of Dam Removal: The History and Lessons of the Condit Dam and Potential Threats from the 2005 Federal Power Act Amendments*, 36 ENVTL. L. 811, 815, 852, 854–59 (2006).

96 *In the Matter of Klamath Hydroelectric Project*, Docket No. 2006-NMFS-0001, FERC Project No. 2082, 5 (Sept. 27, 2006).

97 *Id.* at 2.

Eventually FERC rejected the trap-and-haul solution proposed by PacifiCorp to address fish passage and conditioned PacifiCorp's new license in the construction of fish ladders at the four Klamath dams as recommended by the agencies.[98]

This administrative decision, on the record and after an opportunity for a hearing as mandated by the EPA, set the stage for negotiations that could include the possibility of removing the dams on the lower reaches of the Klamath River. Many of those involved believe that this change of circumstances contributed significantly to what became the Klamath Basin Restoration Agreement (KBRA) because PacifiCorp was now, as a result of this decision, facing a financial choice about the cost of relicensing that put dam removal on the negotiating table. I suspect there were tough and candid conversations within PacifiCorp regarding the cost of what they would have to do to get these dams relicensed and whether that made sense in light of the hydropower the dams were generating. Moreover, consistent with the progression we saw from Condit Dam, where the licensee paid the cost, to Elwha where removal was federally funded, I suspect PacifiCorp was also evaluating its opportunities to avoid the costs of decommissioning or reduce those costs as much as possible. I also wonder whether PacifiCorp was thinking about dam removal in the context of the larger fight that was going on in the Klamath Basin. None of the hardened positions in the Klamath Basin were likely to move in the direction of settlement until somebody pulled their interests off the table and that is what PacifiCorp was able to do. Therefore, when PacifiCorp came to the negotiating table and said, "Okay, we are ready to talk about what it would mean to take out the four lower dams," the dynamics of negotiation changed and the stage was set for a settlement agreement.

We do not have time today to investigate the finer details of the proposed settlement agreement. The agreement includes a sub-agreement, called the Hydropower Settlement Agreement, regarding the hydropower piece that called for the dams to be removed after careful study.[99] In very summary and brief terms, the agreement calls for reintroduction of salmon to the upper basin; salmon still have to

98 Allen, *supra* note 25, at 449.

99 Agreement in Principle, U.S.-PacifiCorp-Cal.-Or., 2008, *available at* http://www.doi.gov/news/archive/08_News_Releases/klamathaip.pdf; Klamath Hydroelectric Settlement Agreement, Feb. 18, 2010 [hereinafter KHSA], *available at* http://216.119.96.156/Klamath/Klamath%20Hydroelectric%20Settlement%20Agreement%202-18-10signed.pdf.

be reintroduced to the basin[100]—but it allows water for agriculture in limited but secure supplies. The off-project irrigators are to meet performance standards. Irrigators continue to get affordable electricity,[101] and the Klamath Tribes secure land in exchange for reducing water rights claims in the adjudication. The cost of the dam removal is estimated at $450 million.[102] If the cost surpasses this amount, the agreement provides California, Oregon, and PacifiCorp a release from liability, and the burden to pay for dam removal falls on the federal government or private supporters.[103] The $450 million comes from PacifiCorp ratepayers in Oregon and California, taxpayers, and state support.[104]

There are plenty of critics of this settlement agreement and I could give a separate presentation on whether or not this is a "good" settlement agreement or not. As you might imagine, different stakeholders have differing views on that point. The focus today, however, is the fact that the relicensing process under a relatively obscure and technical statute as amended by the EPA, not a statute folks would necessarily think of as one packed with environmental protection, has, in fact, unlocked the potential for this kind of agreement to come into place.

In 2010, the Secretary of the Interior was set to make a determination about dam removal.[105] The agreement provided that after that determination was made, the project would proceed only if Congress enacted legislation approving the entire KBRA and settlement, which includes another appropriation of $400 million.[106] That put the price tag of this total settlement, including the Hydropower Settlement Agreement, at $850 million. If the Secretary and PacifiCorp agree to transfer title of the dams, the states authorize funding for removal, and the Secretary identifies a willing dam-removal entity, then we would begin the official dam-removal stage.

Before leaving as Secretary of the Interior, Ken Salazar indicated that he could not make the final dam-removal decision until Congress

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100 *Id.* at C-1.

101 *Id.* at 34, 38.

102 Allen, *supra* note 25, at 459.

103 *See id.*

104 *Id.*

105 KHSA, *supra* note 98, at 19.

106 *See id.* at 10.

had appropriated the funds.[107] I do not know if any of you are following what is going on in Congress right now, but the chance of appropriating $850 million right now for a dam-removal project in a relatively small basin in Southern Oregon and Northern California—important to all of us but maybe not as significant to everybody else—is a hard sell in the legislature. Senators Wyden and Merkley and Governor Kitzhaber have created a task force to bring the parties together and talk about reducing the cost of the settlement agreement.[108] That's where we stand.

I am not dismayed, however, about where things stand in the Klamath Basin because I think those who worked on the Elwha, the Condit, and other dam-removal projects in the United States know that there were doubtful moments along the way where it looked like the political landscape was not going to result in dam removal. There has been astounding work done here. Remember, if this agreement does not go through, we still have a federal licensee that has an order from FERC to put in fish ladders that make the business proposition for those facilities very difficult. Even if this entire settlement goes away the question of the dam removal on those four facilities is still a live one through the regulatory and legal process created under the FPA. We would fall back to that process and start again.

To close, what is this new era that we are ushering in? I think we are experiencing increased pressure to generate more green power, for very good reasons, and hydropower is considered among those options. The process of dam removal impacts that generating capacity, but often removal projects focus on relatively small generation sources or on ecosystems where the impacts outweigh the benefits of the power capacity. Thus, in the end, the efforts to remove structures may help us focus on generation capacity at locations

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107 Scott Learn, *Interior Secretary Ken Salazar Says He Won't Hit March 31 Deadline for Approving Klamath Basin Dam Removal*, THE OREGONIAN, Feb. 28, 2012, http://www.oregonlive.com/environment/index.ssf/2012/02/interior_secretary_ken_salazar.html.

108 After the delivery of this speech, a tentative agreement was released on December 13, 2013. *Klamath Water Deal Reached Between Ranchers, Tribes*, ASSOCIATED PRESS, Dec. 2, 2013, *available at* http://www.oregonlive.com/pacific-northwest-news/index.ssf/2013/12/klamath_water_deal_reached_bet.html; *see also* REPORT AND RECOMMENDATIONS FROM THE KLAMATH BASIN TASK FORCE TO SENATORS WYDEN AND MERKLEY, CONGRESSMAN WALDEN, AND GOVERNOR KITZHABER (2013), *available at* http://www.oregon.gov/owrd/ADJ/docs/2013-12-3_Final_Draft_Task_Force_Report_CLEAN.pdf (final review draft not approved by any party). Recently an agreement was reached on the Upper Klamath Basin. Press Release, Dep't of the Interior, Historic Agreement Reached on Upper Klamath Basin Water (Mar. 5, 2014), *available at* www.oregon.gov/gov/media_room/Pages/press_releases/press_030514.aspx.

where it makes the most sense. There are also efforts to retrofit existing facilities that make sense to still have in place to make sure they are hopefully producing an ecologically responsible amount of hydropower. In all of this, the FERC relicensing process that we have talked about today provides the regulatory framework that facilitates these tough conversations about what hydropower facilities make sense and which may no longer make sense. In the United States today, the FERC process is the game in terms of active dam removal and river-restoration proposals—an amazing result from an energy licensing agency and a statute designed to promote the development of hydropower. The FPA and the regulatory process Congress created provides the gateway to considering dam removal. FERC is where the action is in terms of dam removal and I believe it is where the action will continue for quite some time. This sits in stark contrast to the larger federally owned dams and the likelihood that we will experience serious federal dam-removal proposals. I do not believe we will experience serious removal proposals, even though they may make sense, because of the size of many of these facilities, their significance, and the requirement for Congressional action as opposed to a predetermined regulatory process. Rather, the driver for these facilities in terms of river restoration is compliance with the ESA and other federal environmental statutes. Because there is not a time-limited license, however, I do not think we are going to see serious consideration of dam removal despite the fact that some of these facilities may cause more significant problems than many of the facilities we have or will take out under the FPA. Many of these federal facilities may be a more central key to river restoration, ecological recovery, and system resilience than the FPA licensed facilities in the same basin. Moreover, any proposal on a federally owned facility will not accommodate citizen participation in the way that the FPA does for a FERC licensed facility.

Rather, as I've said, the big driver outside of the FPA in these situations is the ESA, particularly the Section 7 consultation process for federal, action agencies, and potentially the Clean Water Act as well. In the context of both of these federal statutes the interested public can comment, try to influence the agency decision-making process, and ultimately file a lawsuit, but I wonder whether this is a match for the kind of engagement and on-the-ground results we have seen from the FPA. Perhaps the driver will be the need to quantify water rights and the state's role in facilitating the administration of

water rights or adjudicating water rights through a general stream adjudication. This process could conceivably implicate issues like dam removal. I wonder, however, if a state administrative law or the general stream adjudication process provides the same kind of meaningful and action-forcing regulatory provisions that you have in the FPA process. The general stream adjudication and the public process for the administration of water rights in many states is limited to those who hold water rights. If you are a citizen and you do not hold a water right, it can be very difficult to impact the dynamics on a river in the context of that general stream adjudication.

The FPA and the relicensing process represent a very unique and profound way to take another look at our decisions to build dams. The FPA sets the table for us to ask ourselves those tough questions again and to correct or change our course. The FPA give a structure in which to ask the hard question and face the reality of how we publicly finance these kinds of projects, both when we are building them and when we decide to remove them. This financing question, at the time of removal, lies at the heart of the decision making for many private FPA license holders.

We have increased interest and demand for hydropower as a low-carbon source of energy and a gap-filling source of energy for other renewables. That demand is tempered by the recognition of the river ecosystems value and bounded by a regulatory process that allows society to take a second look at the kind of tradeoffs we are making.

We may actually be embodying the wisdom of our own Northwest Supreme Court Justice, William O. Douglas, when he said, in considering the High Mountain Sheep Project pump storage project at the confluence of the Snake and Columbia rivers, that:

> [t]he importance of salmon and steelhead in our outdoor life as well as in commerce is so great that there certainly comes a time when their destruction might necessitate a halt in so-called 'improvement' or 'development' of waterways. The destruction of anadromous fish in our western waters is so notorious that we cannot believe that Congress through the present Act [referring to the FPA] authorized their ultimate demise . . . . Mr. Justice Holmes once wrote that "[a] river is more than an amenity, it is a treasure."[109]

Thank you so much. I am happy to take questions.

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[109] Udall v. Fed. Power Comm'n, 387 U.S. 428, 437–39 (1967) (quoting New Jersey v. New York, 283 U.S. 336, 342 (1931)).

I
QUESTION AND ANSWER SESSION

Q: When these dams come out, where are surrounding areas going to get power from? While there may be downsides to hydropower, how does it compare to other sources of energy?

A: The relicensing process has built into it an examination of power issues. Certainly, the law and the regulatory process envision those kinds of inquiries. I think the other place those kinds of inquiries end up happening are when licensees are facing business and market decisions. I do not know for sure because I have never represented a licensee. I have only been on the other side of that equation. I suspect that it is causing licensees—private hydropower developers—to think about what it means to retrofit facilities that produce more power to put in the market and take other facilities out. I think it is reorienting a licensee's way of looking at the hydropower resource on the whole, rather than focusing on individual dams, to make a more holistic judgment about where it make sense to have facilities. That way we are getting as much hydropower as we can out of those facilities—a smart-growth kind of model.

That pressure to find another source of power is real. With the presence of renewable energy standards that states are being forced to meet, there can be good, or maybe better things for the environment that come from hydropower and that is significant in terms of carbon in the atmosphere and the situation we face with climate change. Those pressures and dynamics are very real and very present so please do not hear me to be saying we are getting ready to take out all of our hydropower dams. That is not happening. We are ushering in an era where we are taking a second look and we are recognizing the value in that. When we are taking that second look, environmental considerations and impacts to fisheries and habitats are at that table in the same way as some of those other questions. I just don't see that happening any place else in the law. This is why the FPA is one of my favorite statutes and I never thought I would say that. An amazing thing is happening under this relicensing process under the FPA—and it is in this Department of Energy, in this Commission known as FERC. Who would have thought that's where the locus of this restoration work would be?

Q: Have the environmental impacts of removing a dam ever prevented a dam removal?

A: That is a great question. I do not know if it has ever prevented a removal. I know certainly with regard to dam removal on the Klamath dams there are some very serious environmental concerns, including the toxicity of the sediment that has accumulated behind the dams and the impact of sediment release on the downstream fishery. If you watch the longer Condit Dam removal video,[110] you will see that dam deconstruction is another whole process that involves NEPA, Section 7 [ESA] compliance, and Clean Water Act compliance. Just because it is an overall positive thing for the environment, it still triggers all of those statutes and implicates another set of environmental concerns. The process of taking a dam out is as robust as the process of putting one in, in terms of evaluating those impacts. In that Condit video, which I encourage you to go watch, they gathered up all the salmon before they blew it in order to try to protect them. Lots of trap-and-haul operations go on to try to have the least amount of environmental impact on the deconstruction process. There is a lot of fine legal work being done around all of those compliance efforts in the deconstruction process as well. When you see some of those videos, it is no small engineering feat. It is no small feat in terms of environmental compliance as well.

Q: What happens to non-consumptive rights in general stream adjudications?

A: That is a great question. Somebody should write a paper on that. Sometimes there are water rights and storage rights associated with these facilities. So there's a question about what happens when that reservoir is not there anymore: where do the storage rights go? It is going to be a function of state law in most cases because the licensees have secured the necessary water rights under state water law. My Water Law students should know that at this point. If you do not, come and talk to me. It depends on what state law says if they are state-based water rights. Oregon's water code has this interesting provision about those rights potentially reverting to instream flow and becoming instream flow provisions.

Q: Are the four dams on the lower basin of the Klamath able to operate even though they have not been relicensed?

A: Yes. They operate under annual licenses from FERC. FERC has a process when we are in our current predicament for issuing

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110 *See Finding Their Way Home: Salmon Return After Breach of Condit Dam*, COLUMBIA RIVERKEEPER, http://columbiariverkeeper.org/blog/finding-their-way-home-salmon-return-after-breach-of-condit-dam/ (last visited Feb. 9, 2014).

annual licenses with some conditions and requirements on the licensee. The idea is that we do not make it worse while we are trying to figure out if we can take them out. This is an annual process that the licensee goes through.

Q: Once funding somehow gets appropriated for decommissioning, are there any other hang-ups or other issues that need to be resolved before they start decommissioning?

A: I am sure there will be. For the parties who do not like the Klamath Basin Restoration Agreement and don't believe it was an appropriate settlement for the conflict in the basin, I see an upsurge in efforts to revisit the whole agreement whether in Congress or in the courtroom. What is really interesting about Klamath now is that you have an agreement about removing a set of dams embedded in a larger set of water-rights questions, land-tenure questions, Endangered Species Act questions, and power questions. I do not think we have seen that before in this context. Each negotiating party has the pieces of the agreement they like or dislike, and it has a lot of moving parts. I think everybody who is involved in the Klamath is a little on pins-and-needles about whether the agreement will hold in the face of this lapse of time.

We had a very difficult water year in the Klamath Basin this summer—for those of you who followed it—and I think the jury is still out on whether all the parties are still holding to the agreement, given the lack of action in Congress. The removal of those dams will be the biggest project ever. There are four of them. The engineering that will go into it and the environmental impacts that will have to be studied as a result of it are bigger than anything we've done before. Even if tomorrow Congress appropriated $850 million, I do not know if we would be out of the woods. I know the Secretary's study laid out a path for moving forward with dam removal. The proposal is serious and that path was set forth. Ultimately, the Secretary decided that he was unable to sign it until Congress had appropriated the money. That was part law, part politics from my perspective.

Q: A FERC hydropower license must be in the public interest, which is a very vague term. Do you think that as FERC sees it, or as this plays out in front of FERC, that the actual notion of what is in the public interest has changed? Or is it that declines in fisheries have gotten more obvious and severe?

A: I think it is a couple of things. As you know, the public interest is a tricky thing—sometimes it is defined, sometimes it is not.

Our casual definition of what the public interest is can look really different than how Congress or a state legislature defines it. One powerful change in terms of the FPA was the enactment of the 1986 amendments, which helped define what the public interest was. This is very significant because Congress said, "FERC, when you are examining this license or this relicense, you have to give equal consideration to these things." By clarifying what needed to be given equal consideration, they defined what that public interest looks like. They bound that agency to this standard. In my Administrative Law class we talk about how Congress sometimes passes statutes that are so wide open and without precise definition that they give the agency a lot of discretion. The agency can be anywhere it wants to be. That is not the case with FERC and the FPA. There are some bounds on that discretion.

The other thing that has happened is the simple fact of having to take a second look at the relicensing process. The way the larger regulatory structure is built forces us to come back to the table; it is not a decision that is locked in place. When that happens, you have these kinds of provisions, as well as this astounding authority of conditions and prescriptions that other agencies can apply that are mandatory on the license. Suddenly, the way you are evaluating one of these licenses opens up and ultimately informs the licensee's business decision. It is a remarkable regulatory structure. A lot of people hate it or are confused by its complexity. I get to have the law professor's perspective. It's amazing. It is a regulatory structure that I think begins to get at what society wants and expects from these facilities. It is not a law that mandates dam removal. It is not a law that mandates dam construction. It is a law that actually sets the stage in a way that we can make, what I hope, are more informed and responsible decisions that we can also revisit as circumstances change. The licensee at some point asks: "What are we fighting for here?" The market and the business decisions are allowed to enter the decision-making space as well.

Q: Where do we stand on the timeline for most of these projects? Are we just getting into our second looks? Or have they passed?

A: We are well into it. We are nearing the final stage. Most of the large-project FERC relicensing is over or nearly over. There are smaller projects out there but the bulk of the big relicensing efforts are over or well under way. Projects like the Klamath can stretch on for a long time. A standard FERC relicensing process is about six years. You have to start five and a half years out, before your license

expires. Most utilities will start long before that doing some of their environmental studies. Many projects go past their license expiration and operate on annual licenses until there is an ultimate outcome. There is also a reopener process that deals with changed circumstances while the license is ongoing and like so many things today, that is the subject of another whole talk.

If the license is reauthorized or granted and the project is operational, that project may now be operational with a whole set of conditions and prescriptions, and other things it has to do. There is a whole body of work around making sure the facility is operating consistent with those conditions.

Q: I was struck by the cost of decommissioning: over $20 million for Marmot Dam. It seemed like that project was done in one day. What costs $25 million besides lawyers?

A: A lot of lawyers, I'm sure. Others may be able to answer this question in terms of what the costs associated with decommissioning are. I am most familiar with the costs associated with the Klamath, which was $850 million. Nothing aggravates me more than when everybody says: "Oh look. All the parties came together in a stakeholder-based negotiation in the Klamath Basin and they settled it. See what can happen when we all come to the table together and we get along?"

My response is to add: "And you agree that the federal government will contribute $850 million. I can settle a lot of things with $850 million when it is not my own money." Think about that for a minute: those parties came together and negotiated about the federal government providing $850 million. Yes, they were able to reach an agreement and I don't want to take away from the enormous accomplishment in that. But, part of the cost associated with that deal is buying out water rights and providing other sources of cheap electricity. There are all kinds of intricacies in that agreement. The cost of part of that settlement—the one I am most familiar with—is associated with that kind of conflict. To get people to move off of what they believe their solid legal positions are will take a lot of money. The question is whether there is $850 million out there that the public is willing to spend to resolve that particular conflict.

I suspect all the settlements have similar dynamics, just in a smaller form. For Condit, money had to be spent on studies before the dam was removed. There was scientific work and engineering work that had to be done to accomplish that goal. It is very expensive. One

controversial question is what share of the decommissioning cost should be borne by the licensee. That's why in the 1994 FERC statement, the words "normally," "anticipated," and "reasonable" got thrown in there. You do not want to create a disincentive where the cost of taking a dam out is so expensive for the licensee that it actually makes more sense for them to run a bad facility than take it out. At the same time the licensee is also the business entity that has benefitted from that dam and made a profit from, what I would call, a public resource. There's a lot of controversy inside that question of liability. Once a licensee makes a decision that decommissioning is appropriate—that it does not make business sense to proceed—the plan becomes figuring out how to keep decommissioning liability the lowest from the perspective of the licensee. How can we build a coalition, a set of negotiators, and a set of constituents that will help us support financing this some other way than from the coffers of that licensee? I think that for licensees, that's what happens. I suspect that PacifiCorp might be the most interested party in seeing the KBRA go forward. They have a huge interest in this larger settlement holding.

Thank you so much to JELL and all of you for your attention today. I look forward to the rest of the symposium today.