

In the
United States Court of Appeals
For the Seventh Circuit

No. 99-1770

City of Kaukauna, Wisconsin, Inter Lake
Papers, Inc., and Wisconsin Electric Power Company,

Petitioners,

v.

Federal Energy Regulatory Commission,

Respondent.

On Petition for Review of Orders of the
Federal Energy Regulatory Commission.
80 FERC para. 62,232, 62,233, 62,234 and 86 FERC para. 61,096.

Argued December 1, 1999--Decided June 6, 2000

Before Bauer, Cudahy and Flaum, Circuit Judges.

Cudahy, Circuit Judge. Central Wisconsin and its
medial artery, the Fox River, are a rich source
of history, as this case reveals.

In this case, the petitioners each operate
hydropower projects at federally owned dams on
the Lower Fox River (the part of the river below
Lake Winnebago). All of these projects are
located downstream of the government-owned dam at
Menasha (the Menasha dam), which controls the
level of Lake Winnebago and regulates the flow of
the Fox River as it leaves the lake. In September
of 1997, the Federal Energy Regulatory Commission
(FERC or the Commission) exercised its power
pursuant to sec. 10(f) of the Federal Power Act
(FPA), 16 U.S.C. sec. 803(f), and assessed the
petitioners a total of \$338,984 in charges for
"headwater benefits." These hydropower
enhancements were realized at the petitioners'
projects as a consequence of the more even flow
of the river attributable to the improvement of
the Menasha dam's storage-and-release capability
in 1937. FERC also required the petitioners to
begin paying annual "headwater benefit" charges.
The petitioners argued to FERC that these charges
were unjustified because they already owned the
rights to "headwater benefits" as a result of a
series of conveyances beginning in the mid-
nineteenth century--starting with a grant from

the United States to the State of Wisconsin in 1848. FERC rejected this argument, and the petitioners filed for review in this court. We agree with the petitioners and reverse.

I. The History and Development of the Fox River/1

In 1634, the French explorer Jean Nicolet became the first European to set foot in Wisconsin, claiming it for France. He began his exploration at Green Bay, where the Fox River flows into Lake Michigan, and traveled up the Fox in a southwesterly direction through Lake Winnebago as far as the site of the present city of Berlin, Wisconsin. Forty years later, Father Jacques Marquette and Louis Jolliet traveled farther up the Fox, eventually reaching the portage between the Fox and Wisconsin Rivers, where the two rivers are only about a mile apart. From that portage--where the city of Portage, Wisconsin, is now located--the Fox River flows northeastward into Lake Michigan, and the Wisconsin River (which Marquette and Jolliet then followed) runs southwestward into the Mississippi River. For more than a century after Marquette and Jolliet discovered it, European fur traders used the portage as a link in their passage westward.

In September of 1828, three companies of the First United States Infantry arrived at the Fox-Wisconsin portage to build Fort Winnebago. One of the main reasons for establishing this strong point was to prevent the Winnebago Indians from closing the commercially important trail between the rivers. This military presence encouraged settlers to come to the area, and travelers eventually became dissatisfied with the well-worn but marshy trail. This path was virtually impassible during times of high water, and eventually the idea of a canal gained attention. Given the recent success of the Erie Canal and the great interest in canals in this pre-railroad era, a Fox-Wisconsin canal seemed like a splendid idea. If the canal and other improvements to the Fox River were successful, there would be a continuous waterway from the Atlantic coast to New Orleans, by way of the Great Lakes. In 1837, the Winnebago Indians were somehow induced to give up all their lands in Wisconsin, and a group of New York and Wisconsin businessmen formed the Portage Canal Company. Construction of a canal between the Fox and Wisconsin Rivers began, but it stalled after the expenditure of \$10,000. Years passed.

Joel R. Poinsett,² President Martin Van Buren's Secretary of War, saw military value in completing the Fox-Wisconsin waterway, and he urged Congress to appropriate money to complete

its construction. Morgan L. Martin, territorial delegate from Wisconsin, suggested that money could be saved by giving land and water rights to Wisconsin and letting it build the canal and improve the Fox River. See Ina Curtis, *Early Days at the Fox-Wisconsin Portage* 48 (Columbia County Hist. Soc. 1981). Congress favored Martin's idea, and in 1846, Congress passed a law granting to Wisconsin, upon its becoming a state (which happened two years later), all public lands and water rights necessary for the construction of the canal and the improvement of the Fox River, including land "on each side of the said Fox River, and the lakes through which it passes" from the portage to Green Bay. Act of Aug. 8, 1846, 170 Stat. 83 (1846). On August 8, 1848, the brand new State of Wisconsin gave its assent to this Act of Congress, accepting the offer. See Act of Aug. 8, 1848, 1848 Wis. Laws 58. As part of its acceptance, Wisconsin declared, "[w]henever a water power shall be created by reason of any dam erected or other improvements made on any of said rivers, such water power shall belong to the state subject to future action of the [Wisconsin] legislature." Id. at sec. 16, 1848 Wis. Laws at 62. Work on the canal and other improvements began in June of 1849 under the direction of the newly created Wisconsin Board of Public Works, but progress was slow because of mix-ups between the Board and its contractors. In 1851, the first dam was built across the natural outlet of Lake Winnebago at Menasha. See Ellen Kort, *The Fox Heritage* 74 (Windsor Pub. 1984). The canal between the Fox and the Wisconsin was completed by May of 1851,³ but the State was buckling under the financial burden.⁴ Morgan Martin then reentered the scenario, taking over as a new contractor and attempting to complete the improvements along the Fox River from Lake Winnebago to Green Bay.

Still under financial pressure, Wisconsin decided to "privatize" the project. The Wisconsin legislature issued a special charter to the Fox and Wisconsin Improvement Company (Improvement Company), and on July 6, 1853, Wisconsin transferred "the works of improvement [contemplated by the Act of Aug. 8, 1848 and related acts], together with all and singular rights of way, dams, locks, canals, water power . . . to the same extent and in the same manner that the State now hold[s]" Act of July 6, 1853, sec. 2, 1853 Wis. Laws 92, 93. Thus, the State of Wisconsin disposed of its entire interest in improving the Fox and dumped the associated financial burdens of improvement by transfer to the Improvement Company, which continued the undertaking.

Carrying on the tradition of difficulty and

failure, the Improvement Company found itself bankrupt by 1864. In 1866, the property of the Improvement Company--consisting of the works of improvement, the water powers and the lands--were sold to a group of investors from New York at a court-ordered foreclosure sale. The purchasers were later incorporated as the Green Bay & Mississippi Canal Company (Canal Company) with the mission of expanding the canal and improvements to make way for much larger craft. See Act of April 12, 1866, sec. 2, 1866 Wis. Private & Local Laws 1493, 1494. The Canal Company operated for several years, but during that time very little work was done on the Fox River improvements. Instead, the Canal Company focused on soliciting assistance from the federal government. The anomaly of a public waterway's being held in private hands created some concern in the halls of power, and eventually, none other than Morgan Martin, together with others, suggested that the rights and franchises of the Canal Company come full circle and be surrendered to the United States government.

In 1870, Congress authorized the Secretary of War to enter into arbitration with the Canal Company to determine what compensation should be paid for the assets the United States required to continue the improvements of the Fox River for the purpose of navigation. See Act of July 7, 1870, 16 Stat. 189, ch. 210 (1870). Wisconsin authorized the sale, see Act of March 23, 1871, 1871 Wis. Private & Local Laws 973, and the arbitrators fixed the appropriate compensation at \$325,000 to be paid to the Canal Company. This sum reflected the following valuations: water powers, \$140,000; personal property, \$40,000; and the improvements, \$145,000. The Secretary of War determined that the Canal Company's water power rights and personal property were not necessary to the maintenance of navigation along the Fox River and recommended to Congress that it acquire only the property necessary to maintain navigation, leaving the water power rights and personal property in the hands of the Canal Company. On June 10, 1872, Congress authorized the purchase of the improvements only, compensating the Canal Company in the amount of \$145,000--the prescribed \$325,000 less the value of the water power rights and personal property. The Canal Company deeded the improvements to the United States in September of 1872, transferring:

All and singular property and right of property in and to the line of Water Communication between the Wisconsin River aforesaid and the mouth of the Fox River, including its locks, dams, canals and franchises saving and excepting therefrom and reserving to [the Canal Company] the following described property right and portion of

franchises, which in the opinion of the Secretary of War are of Congress and not needed for public use

Deed from Green Bay & Mississippi Canal Company to United States of America (Sept. 8, 1872) at 3 (1872 Deed), J. App. at 18 (emphasis in original). What was "not needed for public use"--i.e., not needed for navigation--was thus reserved by the Canal Company, and the deed described the reserved property as follows:

[A]ll that part of the franchise of [the Canal Company] viz. the water power created by the dams, and by the use of the surpluse [sic] water not required for the purpose of navigation with the rights of protection and preservation appurtenant thereto and the lots, pieces or parcels of land necessary to the enjoyment of the same and those acquired with reference to the same all subject to the right to use the water for all purposes of navigation

1872 Deed at 3, J. App. at 18. After the execution of this deed, the United States owned all the dams and controlled the waterway under its paramount interest in navigation. The Canal Company owned all the water power rights created by the dams, subject to the United States's navigation interest.⁵ The Canal Company leased water power to several paper mills along the Lower Fox River, and the United States maintained navigation along the entire Fox River. However, with the advance of the railroads, commerce on the Fox River above Lake Winnebago dwindled, and the canal was eventually abandoned. Improvement along the Lower Fox River (below Lake Winnebago and the Menasha dam to Green Bay) continued, and in 1937 the government increased the spillway capacity of the Menasha dam. This permitted more effective control of the water level in Lake Winnebago and, concurrently, stabilized the flow in the Lower Fox River. Today, the Fox River is used partly for navigation but mostly for water power, which since the turn of the century means hydroelectric power. And hydroelectric power is a major focus of federal regulation.

II. Regulatory Background

In 1920, Congress enacted the Federal Water Power Act (FWPA), 41 Stat. 1063 (1920), in order to promote "the comprehensive development of the water resources of the Nation, in so far as it was within the reach of the federal power" *First Iowa Hydro-Electric Cooperative v. Federal Power Commission*, 328 U.S. 152, 180 (1946). In 1930, Congress created a five-member, independent Federal Power Commission (FPC) to exercise licensing authority over dams and other

projects on navigable waters. See Act of June 23, 1930, 46 Stat. 797 (1930). Five years after that, Congress amended the FWPA to provide for regulation of wholesale electric power in interstate commerce, renaming it the Federal Power Act (FPA). See Public Utility Act of 1935, 49 Stat. 839 (1935). In 1977, the FPC was renamed the Federal Energy Regulatory Commission. See Department of Energy Organization Act, Pub. L. No. 95-91, 91 Stat. 565 (1977).

Under the FPA, now codified at 16 U.S.C. sec. 791a et seq., a private party cannot build or operate a dam or reservoir on navigable waters of the United States for the purpose of developing electric power without first obtaining a license from FERC. See 16 U.S.C. sec. 817. Nor can an unlicensed hydropower project use the "surplus water" or "water power" from a government-operated dam. See *id.* The Commission issues licenses to parties, like the petitioners, that have hydropower projects at government dams under sec. 4(e) of the FPA./6 See 16 U.S.C. sec. 797(e). Section 10(e) of the FPA authorizes FERC to charge licensed hydropower projects annual fees for the occupancy and use of government dams or other structures. See 16 U.S.C. sec. 803(e)./7

At issue in the present case, however, is FERC's power under sec. 10(f) of the FPA. See 16 U.S.C. sec. 803(f)./8 Section 10(f) authorizes the Commission to charge appropriate fees to any hydropower project, whether licensed or not, if the project is benefitted by an upstream dam or other upstream improvement. Congress enacted sec. 10(f) as a means of requiring power projects--like the petitioners' projects--to compensate upstream dam owners for "headwater benefits" conferred as a result of "a storage reservoir or other headwater improvement." 16 U.S.C. sec. 803(f). As the Tenth Circuit has explained:

The term "headwater benefits" refers to the situation in which an upstream reservoir, through a program of water storage and subsequent controlled release, alters the natural flow of a river in such a way as to allow a downstream hydroelectric facility to generate more electric power than would otherwise be possible. This is accomplished primarily by augmenting the natural flow of the river with released storage water during seasons when the natural flow would otherwise not be sufficient to allow the downstream facility to operate at full capacity.

Public Service Co. of Colorado v. FERC, 754 F.2d 1555, 1561 (10th Cir. 1985). See also 18 C.F.R. sec. 11.10(a)(2) (defining "headwater benefits"). The system of assessing fees for "headwater

benefits" ensures that downstream power stations "participate in the financial burden" shouldered by upstream projects whenever storage-and-release programs, that provide benefits to downstream owners, are created or improved. In re Southern California Edison Co., Ltd., 1 FPC 567, 574 (1939). See also Farmington River Power Co. v. FERC, 103 F.3d 1002, 1004 (D.C. Cir. 1997).

While FERC clearly has authority to assess water-power-related charges under both sec. 10(e) and sec. 10(f) of the FPA, this authority is not without limit. The FPA states that it is not intended "in any way to interfere with the laws of the respective States relating to the control, appropriation, use, or distribution of water . . . or any vested right acquired therein." 16 U.S.C. sec. 821. Thus, FERC cannot assess charges for the use of water or water rights to which a party has a vested right under state law. See Public Service Co. of Colorado, 754 F.2d at 1566.

III. Headwater Benefits Assessment

In 1992, FERC informed the petitioners that it would be conducting a "headwater benefit" study on the Lower Fox River and would then assess charges for benefits realized by projects downstream of the government-owned dam at Menasha, Wisconsin. As has been noted, the Menasha dam is located where the Fox River leaves Lake Winnebago and regulates the river's flow as it has done since its construction in 1851. All of the petitioners' hydropower projects are located below the Menasha dam. Since 1937, when its spillway capacity was increased, that dam has provided "headwater benefits" to these downstream projects through its storage-and-release program.⁹ In 1994, FERC's Office of Hydropower Licensing issued a report suggesting that a total "headwater benefit" fee of \$338,984 be assessed for past benefits/¹⁰ with additional charges to be assessed in the future. The Director of the Office of Hydropower Licensing, over the petitioners' objections, accepted this suggestion, and on September 12, 1997, issued an order imposing charges. See Wisconsin Electric Power Co., 80 FERC para. 62,232, 64,399-400 (1997); City of Kaukauna, 80 FERC para. 62,233, 64,405 (1997); Repap Wisconsin Inc., 80 FERC para. 62,234, 64,409-10 (1997). The Director found that the petitioners were exempt from "headwater benefit" charges prior to 1937, but that their rights under the 1872 Deed did not cover the incremental generation attributable to the 1937 improvements to the Menasha dam. See Wisconsin Electric Power Co., 80 FERC at 64,399; City of Kaukauna, 80 FERC at 64,404; Repap Wisconsin, 80 FERC at 64,409. The petitioners sought a rehearing on the ground that, as

successors in interest to the Canal Company, they already owned, even after 1937, all rights to "water power" and "surplus water" not required for navigation and employed in power production at any dam or other improvement on the Fox River.

In its Order on Rehearing, the full Commission rejected the petitioners' argument. In making this determination, FERC did not adopt the Director's reliance on the recent vintage of the 1937 improvements to the Menasha dam. Instead, the Commission relied on three arguably independent justifications: (1) the right to "surplus water" and "water power" reserved in the 1872 Deed applied only to the "water power" available at the individual dam sites where the petitioners' projects are located and therefore did not extend to the upstream Menasha Dam; (2) under the FPA, the petitioners' rights to "water power" and "surplus water" did not include benefits attributable to the storage and release of water from an upstream project; and (3) the Canal Company did not in fact own any water power rights at the Menasha Dam, and therefore could not have assigned such rights to its successors. See *Wisconsin Electric Power Co.*, 86 FERC para. 61,096 (1999). The petitioners seek review in this court.

IV. Discussion

When we review a FERC order, we must ordinarily determine "(1) whether the Commission abused or exceeded its authority; (2) whether each essential element of the Commission's order is supported by substantial evidence; and (3) whether the Commission has given reasoned consideration to each of the pertinent factors in balancing the needs of the [regulated parties] with relevant public interests." *Central Illinois Pub. Serv. Co. v. FERC*, 941 F.2d 622, 627 (7th Cir. 1991) (quoting *Peoples Gas Light and Coke Co. v. FERC*, 742 F.2d 1109, 1111-12 (7th Cir. 1984)). A Commission order should not be reversed if FERC has provided "a sound, well-reasoned justification, based upon the evidence in the record, for its action." *Central Illinois Pub. Serv. Co.*, 941 F.2d at 627 (quoting *Northern Indiana Pub. Serv. Co.*, 782 F.2d 730, 746 (7th Cir. 1986)). Our review is usually quite deferential, but, when asked to review FERC's interpretation of a contract as we are here, focusing on the nineteenth-century conveyances, we review with less deference. See *Amoco Prod. Co. v. FERC*, 765 F.2d 686, 690 (7th Cir. 1985). Thus, we will affirm FERC's order only if we find its "interpretation of the [conveyances] was reasonable and in full conformance with law." *Id.* (citing *Texas Gas Transmission Corp. v. Shell Oil*

Co., 363 U.S. 263, 268-69 (1960)).

The petitioners make the same argument before us as they did before FERC. This argument, at its core, is very simple: they claim without dispute that they are the successors in interest of the Canal Company and then argue that they already own the water rights for which FERC has charged them. Nothing in the language of the relevant conveyances, they continue, supports the Commission's narrow constructions of the terms "water power" and "surplus water." To the contrary, say petitioners, the plain language of the conveyances reserved to the Canal Company all actual and potential water power interests along the Fox River, including those that would later be labeled "headwater benefits" in accordance with sec. 10(f) of the FPA. In 1872, the "headwater benefits" created by the Menasha improvements were potential only, but, whenever created, came within the applicable language of the conveyances.

The petitioners' thesis is that the "headwater benefits" for which FERC charged them are merely part of the "water power" and "surplus water" they own as a result of the reservation in the 1872 Deed. To elaborate, their argument goes like this: the State of Wisconsin claimed "water power" "created by reason of any dam . . . or other improvement" along the Fox River; then the Improvement Company received the State's entire interest, including rights to "water power;" then the Canal Company got the Improvement Company's entire interest, again including the rights to "water power;" and finally, when transferring the improvements to the United States, the Canal Company kept the rights to "water power." Thus, the petitioners conclude, because the Canal Company's interest in "water power" derives from the State's original claim over "water power" "created by reason of any dam," the "water power" (and "surplus water") reserved by the Canal Company--and later acquired by the petitioners--includes what has at some point in the evolution of the river been labeled "headwater benefits."

The petitioners have a very strong argument. Beginning with the grant of land from the United States to the State of Wisconsin in 1848, the State validly claimed ownership of all "water power [that] shall be created by reason of any dam erected or other improvements made on any of said rivers." Act of Aug. 8, 1848 sec. 16, 1848 Wis. Laws 58, 62. See *Kaukauna Water Power Co. v. Green Bay & Mississippi Canal Co.*, 142 U.S. 254, 276 (1891) (holding, when asked to determine the validity of the 1848 Act, that "we think it within the power of the state to retain within its immediate control such surplus as might

incidentally be created by the erection of the dam"). Wisconsin later validly transferred its entire interest to the Improvement Company. See *Green Bay & Mississippi Canal Co. v. Kaukauna Water-Power Co.*, 35 N.W. 529, 531 (Wis. 1887) (describing transfer). Then, in 1866, the Canal Company acquired the Improvement Company's entire interest through a foreclosure sale. See *Green Bay & Mississippi Canal Co. v. Patten Paper Co.*, 172 U.S. 58, 74 (1898) (describing transfer as including "the property of [the Improvement Company], consisting of the works of improvement, lands and water powers"); *Green Bay & Mississippi Canal Co.*, 35 N.W. at 532. Thus, in 1866, the Canal Company held the same property and rights along the Fox River as the State had claimed under its Act of August 8, 1848.

The crucial conveyance is the transfer memorialized in the 1872 Deed. By that document, the Canal Company "transferred and conveyed the works of improvement to the United States, reserving to itself the personal property and the water powers" *Patten Paper*, 172 U.S. at 75. Specifically, recall that the United States wanted only property necessary "for the purpose of navigation" and that the deed reserved "the water power created by the dams, and by the use of surplus [sic] water not required for the purpose of navigation." 1872 Deed at 3, *J. App.* at 18. See also *Patten Paper*, 172 U.S. at 75 (quoting deed and discussing the transaction). Thus, under the reservation clause in the 1872 Deed, "whatever title the Canal Company had to such water power and such surplus water at the time of the conveyance, it kept" *Kaukauna Water Power Co.*, 142 U.S. at 278. As we have noted, the Canal Company had title to "water power . . . created by reason of any dam . . . or other improvements" along the Fox River. Act of Aug. 8, 1848, 1848 Wis. Laws 58, 62 (emphasis added). The sheer breadth of the rights reserved in the 1872 Deed suggests that the petitioners already own all water-power-related rights along the Lower Fox River. And it is noteworthy that the United States, in 1872, took only property necessary for the purpose of navigation. The Commission has not argued that the energy-related benefits of the storage-and-release program at the Menasha dam are necessary for the purpose of navigation.

The view that what are now known as "headwater benefits" as recognized by the FPA remained with the Canal Company in 1872 is buttressed by the absence from the record before us of any indication that at the time of the nineteenth-century conveyances a discrete water power interest called "headwater benefits" was recognized or that there was recognition then, by

some other name, of a separate interest in what is now described as "headwater benefits." Neither party specifically addressed this question, but so far as anything before us discloses, what have now been separately identified as "headwater benefits" were in 1872 part and parcel of the larger category of "water power" and "surplus water." This is not surprising since the stabilization of flow that constitutes a "headwater benefit" achieves its only actual energy impact in making available a net increase in "water power" at the various downstream dams. A "headwater benefit" is therefore essentially an enhancement of what is conventionally referred to as "water power" at the various dams. In 1920, sec. 10(f) of the FPA apparently carved out "headwater benefits" as a separate interest./11

FERC presents three arguments to challenge the petitioners' ownership of the "headwater benefits." We will address them in turn. First, the Commission found that the reservation clause in the 1872 Deed applied only to "water power" and "surplus water" developed at the petitioners' individual dam sites. See Wisconsin Electric Power Co., 86 FERC at 61,346. Although FERC concedes that the 1872 Deed did reserve to the petitioners "water power" and "surplus water" rights at their individual dam sites, it in addition believes that the "water power" and "surplus water" rights are limited to these particular dam sites. FERC argues that, based on "historic origins and usage," both of the terms "water power" and "surplus water" refer to the "head and flow that a dam makes available at the dam site."/12 Id. In support of this finding, FERC cites *Chemehuevi Tribe of Indians v. Fed. Power Comm'n*, 420 U.S. 395 (1975), which states that "[t]he phrase 'surplus water or water power from any Government dam' had its origins in legislation enacted in the late 19th and early 20th centuries, conferring on the Secretary of War the authority to lease at individual dam sites excess water for power development." Id. at 414. FERC quotes the Supreme Court's language in dicta accurately, but, of course, the context of the quotation from *Chemehuevi* is entirely different from that in which we address the present issue; *Chemehuevi* discussed legislation that was by its own terms site-specific, and there was no room in the *Chemehuevi* discussion to consider the enhancement of "surplus water" or "water power" by systemic improvements. The legislation analyzed in *Chemehuevi* involved "surplus water" and "water power" that was identified as being at dams, with no focus on the enhancement of these interests by upstream improvements. See, e.g., H.R. 16053, 63d Cong., 2d Sess., sec. 14 (1914) (proposed amendment to

Dam Act referring to "the right to develop power from the surplus water . . . at any navigation dam") (emphasis added); S. 3331, 64th Cong., 1st Sess., sec. 10 (1915) ("right to utilize the surplus water-power . . . at any navigation dam") (emphasis added); H.R. Rep. No. 404, 64th Cong., 1st Sess., at 6 (1915) ("for the use of surplus water and water power generated at dams") (emphasis added).

But in all its discussion of how the terms "surplus water" and "water power" were typically used, FERC never directly addresses the fact that the conveyances relevant to this case used markedly different language than the proposed legislation referred to by Chemehuevi. Here, Wisconsin did not claim rights at a particular dam or even rights at all dams along the Fox River. The State claimed ownership of "water power" created "by reason of any dam . . . or improvement." Act of Aug. 8, 1848 sec. 16, 1848 Wis. Laws 58, 62 (emphasis added). "Water power" created by reason of any dam or improvement suggests a more expansive category than merely "water power" at particular sites, as FERC would have it; instead, "by reason of" seems to denote a claim on "water power" as a systemic concept.

This conclusion is reinforced by the elementary physics of water power. Water power, in the physical sense, is the "[p]ower developed from movement of masses of water . . . through the force of gravity." McGraw-Hill Encyclopedia of Science & Technology, vol. 19 at 396 (8th ed. 1996). At a hydropower station, "potential energy from the weight of water falling through a vertical distance is converted to electrical energy." *Id.*, vol. 6 at 34. The amount of power (usually measured in kilowatts or megawatts) varies directly with the "runoff" and the "head" at a particular dam. See *id.*, vol. 19 at 398. The "runoff" is, quite simply, the volume of water that flows past a point during a given period of time. See *id.*, vol. 6 at 34. The "head" is, again in simple terms, the height of the dam from which the water falls. See *id.* Thus, the "water power" at a particular dam is the product of the dam's height and the rate of flow of the water.¹³ FERC has already conceded that the petitioners own the right to use the "head" created by the federal dams at which they have projects. See note 8, *supra*. But FERC overlooks something when it suggests that "water power" and "surplus water" only concern the energy produced by the head at a particular dam site.

For the 1872 Deed, which incorporated the State's claim to all "water power" created "by reason of any dam . . . or improvement," did not limit "water power" to the energy output

attributable only to the head at a particular run-of-the-river dam. In addition to the head, there, of course, needs to be water flowing at that site, and the water flow is partly a function of the storage-and-release program upstream. By increasing the flow in the Lower Fox River during dry periods, the Menasha dam's storage-and-release program augments the water power available at all the individual downstream sites, without a commensurate decrease during wet periods,¹⁴ thus producing a net gain in "water power" annually. This effect on water flow, which is evident at each of the dams, strongly supports the petitioners' interpretation that the term "water power," as used in the 1872 Deed and in the other conveyances, includes an enhancement of flow as well as the energy contribution of the corresponding head. We conclude that FERC's attempt to limit the meaning of "water power" to exclude this enhancement of flow at the various dam sites is an unreasonable interpretation of the reservation in the 1872 Deed.¹⁵

Another way of looking at the problem is, as we have suggested, to recall that in 1872 there was apparently no recognition of something called "headwater benefits" (or a variant of the term) as a separate interest. This is not surprising. The stabilization of flow resulting from the storage-and-release at the Menasha dam does not produce capturable water power except as it affects the water flow at the individual downstream dam sites. The fact that "headwater benefits" were later identified as a discrete concept and separated from the comprehensive notion of "water power" (at least in the drafting of the FPA) does not undermine the effect of conveyances made many years before its enactment.

The Commission argues, however, that based on the interaction of sec. 4(e), sec. 10(e), sec. 10(f) and sec. 23(b) of the FPA "headwater benefits" cannot be part of the "water power" or "surplus water" rights held by the petitioners.¹⁶ This is a difficult argument because, as we have noted earlier, we are not aware of any recognition in 1872 of something called "headwater benefits" as an interest separate from "water power." Nonetheless, FERC says that, if we adopt the petitioners' expansive definitions, we create anomalous results in interpreting the FPA. "Headwater benefits," FERC explains, concern the "distinct energy benefits to downstream projects of regulating the river flow so that it remains even and predictable." Respondent's Br. at 14. See also Wisconsin Electric Power Co., 86 FERC at 61,347. This, it is contended, is somehow different from "water power" which FERC defines as "hydroelectric power

created by the Government dam." Respondent's Br. at 5. FERC further argues that the petitioners' attempt to conflate these two distinct concepts is inconsistent with the FPA's statutory scheme. Making "headwater benefits" part of "water power" or "surplus water," as the petitioners' propose, would violate congressional intent with respect to the licensing scheme in the FPA. FERC explains:

A more expansive interpretation of these terms would in fact extend the jurisdiction of this Commission beyond its accepted limits. If a downstream project receiving headwater benefits from an upstream government storage dam were said to be using surplus water or water power from that dam, the project would be required to be licensed pursuant to Section 23(b)(1) of the FPA. Yet the Commission has never required the licensing of such projects on that basis, and some projects receiving headwater benefits from federal dams are in fact unlicensed. Indeed, in the 1935 amendments to the Federal Water Power Act, Congress found it necessary to adopt a specific provision in Section 10(f) for charging unlicensed projects for headwater benefits. Thus, it is clear that Congress did not consider the use of "surplus water or water power" to include the mere receipt of headwater benefits by a project. Wisconsin Electric Power Co., 86 FERC at 61,347 (footnotes omitted).

We are quick to recognize FERC's expertise in interpreting the FPA, and we respect its concerns about jurisdictional limitations, but we think that this argument is misplaced. We are not interpreting the FPA. What Congress intended in the FPA and the scope of FERC's jurisdiction under that statute are not our concern here because we are interpreting the 1872 Deed and related conveyances, not the FPA. If we were interpreting the FPA, or perhaps even a post-FPA conveyance, there would be some force to FERC's argument. For if, under the statute, the receipt of "headwater benefits" were to constitute the use of "water power" or "surplus water," all downstream projects receiving such benefits would presumably require a license. This licensing requirement would make FERC's authority under sec. 10(f) of the FPA to charge unlicensed facilities for "headwater benefits" redundant. If we were construing the FPA, this would be a problem. But instead we are construing the 1872 Deed executed at a time, so far as we know, before "headwater benefits" were separately thought of or given a name. There is nothing in the record indicating that the terminology used in the FPA was current in 1872. The FPA was enacted long after the 1872 Deed was executed,

and there is no reason to believe that usage under the FPA controls the much earlier instrument. See *Florida E. Coast Ry. Co. v. CSX Transp. Inc.*, 42 F.3d 1125, 1130 (7th Cir. 1994) ("Whereas the law in effect at the time of execution sheds light on the parties' intent, subsequent changes in the law that are not anticipated in the contract generally have no bearing on the terms of their agreement.").

Finally, FERC argues that the 1872 Deed could not have transferred "water power" rights at the Menasha dam because those rights belonged to the private owners of that dam in 1855. The Canal Company, FERC argues, could not have conveyed what it did not own. In support of this, FERC cites a 1922 report from the Army Corps of Engineers to the House of Representatives that discusses the history of the Fox River and its projects. See H. Doc. No. 146, 67th Cong. (1922). We agree with FERC, at least for present purposes, that the Canal Company did not own any "water power" rights at the Menasha dam,¹⁷ but we believe that FERC draws an incorrect conclusion from this circumstance. As we have earlier made clear, we are not concerned with "water power" at the Menasha dam site but rather with "water power" "created by reason of" the Menasha dam. The petitioners' argument is not that they own "water power" created by the head and flow at the Menasha dam but that, when the Menasha dam releases stored water, it creates additional power potential at their downstream hydropower projects, and the consequent incremental energy belongs to them.¹⁸ This is what FERC refers to as "headwater benefits" under sec. 10(f) of the FPA, but this usage does not detract from the concept that the increased generation of power realized by petitioners' projects is correctly considered "water power" "created by reason of [the Menasha] dam." The increase is an enhancement of the "water power" available at the various dams downstream and was reserved by the 1872 Deed. Therefore, the petitioners already own the rights to that "water power," and we find that FERC's reliance on the ownership of "water power" rights at the Menasha dam is unreasonable as well.¹⁹

V. Conclusion

For the foregoing reasons, we find FERC's interpretation of the petitioners' rights under the 1872 Deed and other conveyances--as successors in interest to the Canal Company--to be unreasonable. The United States could hardly foresee the FPA and its requirements when it entered into the 1872 Deed with the Canal Company. However, it did not bargain then for "headwater benefits" (or rights to incremental

power attributable to a storage-and-release program of a government-owned dam, however designated), and we are only holding it to its agreement. Therefore, we Vacate the Commission's Order on Rehearing, and Remand for the entry of an order consistent with this opinion.

/1 When preparing this history section, we consulted the briefs of both parties as well as several historical resources. These sources included: The Attainment of Statehood (Milo M. Quaife, ed., State Hist. Soc. of Wis. 1928); Ina Curtis, Early Days at the Fox-Wisconsin Portage (Columbia County Hist. Soc. 1981); August Derleth, The Wisconsin: River of a Thousand Isles (Rinehart & Co. 1942); Thomas Huhti, Wisconsin Handbook (Moon Pub. 1st ed. 1997); Ellen Kort, The Fox Heritage (Windsor Pub. 1984); Wisconsin's Past and Present: A Historical Atlas (Univ. Wis. Press 1998); Samuel Mermin, The Fox-Wisconsin Rivers Improvement: An Historical Study in Legal Institutions and Political Economy (Bd. of Regents Univ. Wis. 1968); Prairie, Pines and People: Winnebago County in a New Perspective (James I. Metz, ed., Oshkosh Northwestern Co. 1976); Joseph Schafer, The Winnebago-Horicon Basin: A Type Study in Western History (State Hist. Soc. of Wis. 1937); Some Laws and Documents Relating to Hydraulic Power of Fox or Neenah River (Moses Hooper, ed., Sarau & Weidner 1881); John N. Vogel, et al., Lower Fox Corridor Study (State Hist. Soc. of Wis. 1992). Specific citations to individual sources will be provided only for facts unique to that source.

/2 Mr. Poinsett was immortalized by his introduction of poinsettia plants into the United States from Mexico. See Curtis, *supra* note 1, at 48 n.1.

/3 The first vessels appeared on the canal on May 24, 1851. The River Times described the event: "The beautiful steamer, John Mitchell, near accomplished the feat of passing through the canal at this place on Saturday last. She came up as far as Main Street. As the John Mitchell came up the canal, the Enterprise came up the Wisconsin River to the head of the canal. The blustering rivalry between the inhabitants of different waters (the throat of each giving its best pull and whistle alternately) was quite exhilarating, and called out a large concourse of citizens to gaze upon the scene presented and make predictions for the future. After a short time boats and citizens withdrew, amid strains of music and the noise and confusions were over." In the years that followed, the canal became an important, and better coordinated, artery for traffic. See Derleth, *supra* note 1, at 162-63.

/4 The Wisconsin Constitution prohibited the

creation of a debt of any size for internal improvement, and funds from the sale of lands were running out. See Schafer, *supra* note 1, at 103-04, 104 n.12.

/5 The United States maintains dams along the Fox River only for public purposes like navigation and flood control. Any other use of those dams is incidental: the United States's only obligation is to public purposes. If the government decides to undertake an action in the interest of navigation and that action harms a party that is using the water power--like the petitioners here--that user has no recourse: "The government may lower the dam and embankment, or may remove the same and destroy the water-power entirely, and the plaintiff cannot prevent it." *Green Bay & Mississippi Canal Co. v. Kaukauna Water-Power Co.*, 35 N.W. 529, 537 (Wis. 1887), *aff'd* *Kaukauna Water-Power Co. v. Green Bay & Mississippi Canal Co.*, 142 U.S. 254 (1891). But, so long as the United States maintains a dam for navigation purposes, the water-power user may carry on its use. See *id.*

/6 The exception is Wisconsin Electric's project at Appleton, which operates under a pre-1920 permit. Wisconsin Electric's other projects are federally licensed, and, in any event, our ruling here does not turn on whether a particular project is licensed, so we need not distinguish between petitioners' licensed and unlicensed projects.

/7 The Commission has never charged the petitioners that operated licensed hydropower projects located at government dams annual fees under sec. 10(e) because, as FERC explains, the Commission recognizes that the petitioners' rights under the 1872 Deed exempt them from such charges for the use of "surplus water" or "water power" at the federal dams at which they are located. See, e.g., *City of Kaukauna, Wisconsin*, 12 FERC para. 62,130 (1980).

/8 Section 10(f) of the FPA, 16 U.S.C. sec. 803(f), reads, in full, as follows:

(f) Reimbursement by licensee of other licensees, etc.

That whenever any licensee hereunder is directly benefited by the construction work of another licensee, a permittee, or of the United States of a storage reservoir or other headwater improvement, the Commission shall require as a condition of the license that the licensee so benefited shall reimburse the owner of such reservoir or other improvements for such part of the annual charges for interest, maintenance, and depreciation thereon as the Commission may deem

equitable. The proportion of such charges to be paid by any licensee shall be determined by the Commission. The licensees or permittees affected shall pay to the United States the cost of making such determination as fixed by the Commission.

Whenever such reservoir or other improvement is constructed by the United States the Commission shall assess similar charges against any licensee directly benefited thereby, and any amount so assessed shall be paid into the Treasury of the United States, to be reserved and appropriated as a part of the special fund for headwater improvements as provided in section 810 of this title.

Whenever any power project not under license is benefited by the construction work of a licensee or permittee, the United States or any agency thereof, the Commission, after notice to the owner or owners of such unlicensed project, shall determine and fix a reasonable and equitable annual charge to be paid to the licensee or permittee on account of such benefits, or to the United States if it be the owner of such headwater improvement.

/9 The petitioners do not dispute that their projects, in fact, receive benefits from the Menasha dam: the storage-and-release program, which stabilizes the flow of the river, allows the petitioners' projects to generate more electricity than otherwise would be available. It is significant that all of the petitioners' projects operate on a "run of the river" basis, meaning that they do not alter the flow of the river but merely take advantage of the water as the Fox River flows from Lake Winnebago to Green Bay. This means that none of the petitioners' projects located closer to the Menasha dam provides any "headwater benefits" to those farther downstream. Thus, the only "headwater benefits" at issue in this case are those provided by the Menasha dam.

/10 The suggested fees cover the period from 1966. The length of the assessment period was based on the Commission's policy of limiting retroactive assessments to a period of 25 years, even though the Commission asserts that it has the authority to assess "headwater benefit" charges as far in the past (after the passage of the FWPA in 1920) as those benefits were received. See Louisville Gas and Elec. Co., 58 FERC para. 61,338 (1992). See also Wisconsin Electric Power Co., 86 FERC para. 61,096, 61,344 at n.3.

/11 The term "headwater benefits," or some variant of it, might have been in use somewhere before 1920, but no such usage has been called to our

attention--certainly not a use in or before 1872.

/12 The "head" refers to the height from which water falls, i.e. the height of the dam. The "flow" obviously enough, refers to the quantity of water that passes over the dam in a stated period of time. More on this later. See, pages 19-20, *infra*.

/13 This relationship is analogous to a like relationship in electricity where electric power in watts is the product of the electric potential in volts (analogous to the height of the dam) and the rate of flow of electric current in amperes.

/14 Of course, during wet periods, the Menasha dam's storage program decreases the natural flow of the Fox River. But apparently the loss of this flow does not result in a hydroelectric power loss, if any, equaling the gain in dry periods. Hence, the more uniform flow produces a net gain in available power.

/15 We also note that this logic applies equally strongly to the "surplus water" reserved by the 1872 deed. As the terms of the 1872 Deed imply, "surplus water" refers to water not needed for the government's navigation uses. See 1872 Deed at 3, J. App. at 18 (reserving the "surpluse [sic] water not required for the purpose of navigation"). FERC does not now nor, to our knowledge, has it ever claimed that the Menasha dam's storage-and-release program modifies the water flow in a way important for "the purpose of navigation." Instead, the Menasha dam stores and releases water in order to maintain an appropriate water level in Lake Winnebago. See Wisconsin Electric Power Co., 86 FERC para. 61,096, 61,344 (1999). In fact, this is the purpose for which the spillways at that dam were improved in 1937. See *id*. Although our understanding of the scope of the term "water power" supports our holding that the water released from the Menasha dam creates and enhances "water power," we also believe that the water released is properly considered "surplus water" within the meaning of the 1872 Deed.

/16 To support this conclusion, FERC cites its decision in Pyramid Lake Paiute Tribe v. Sierra Pacific Power Co., 1 FERC para. 63,035 (1977). But, because Pyramid Lake was decided using definitions of "water power," "surplus water" and "headwater benefits" developed under the FPA, we do not find this persuasive. As we presently discuss, usage in the after-adopted FPA is not determinative of usage in the 1872 Deed.

/17 FERC's cited support for this point is ambiguous at best, but we have found several historical

sources that confirm this fact. See, e.g., Some Laws and Documents, supra note 1, at 161-64; Mermin, supra note 1, at 140.

/18 The petitioners point to Kaukauna Water Power Co. v. Green Bay & Mississippi Canal Co., 142 U.S. 254 (1891), in which the United States Supreme Court held that the Kaukauna Water Power Company could not divert water from a United States owned dam (at which the Canal Company had a power generation facility) because this would deprive the Canal Company of its rights to all water power created by the dam. This holding supports the conclusion that "water power" includes the flow approaching the dam.

/19 Although the Commission did not adopt the Director's conclusion that the petitioners did not have rights to "headwater benefits" created by the 1937 improvements at the Menasha dam but that they did have rights in such benefits existing prior to the date of the improvements, we believe that the Director's conclusion was also unreasonable. This is so because the petitioners' rights are not limited to "surplus water" or "water power" created on or before a specific date. Wisconsin originally claimed all "water power" rights created or to be created by dams or improvements along the Fox River regardless of when those dams or improvements were made. See Act of Aug. 8, 1848, sec. 16, 1848 Wis. Laws 58, 62 ("Whenever a water power shall be created by reason of any dam erected or other improvement made on any of said rivers, such water power shall belong to the state subject to future action of the [Wisconsin] legislature.") (emphasis added). Therefore, just as the petitioners are exempt from sec. 10(e) charges for the use of "water power" at dam sites (even though those dams have been improved or rebuilt since 1872), they are also exempt from sec. 10(f) charges for "headwater benefits" even though the Menasha dam was improved in 1937.