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UNITED STATES OF AMERICA

FEDERAL ENERGY REGULATORY COMMISSION

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- Free Flow Power Corporation : Project No. 12829-001
- FFP Project 28, LLC : Project No. 12861-001
- FFP Project 32, LLC : Project No. 12921-001
- FFP Project 41, LLC : Project No. 12930-001
- FFP Project 42, LLC : Project No. 12938-001
- FFP Project 54, LLC : Project No. 12915-001
- FFP Project 57, LLC : Project No. 12912-001

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PUBLIC SCOPING MEETING

Scotlandville Branch Library  
 7373 Scenic Highway  
 Baton Rouge, Louisiana 70807  
 Thursday, April 30, 2009

The public hearing, pursuant to notice, convened at 10  
 a.m. before a Staff Panel:

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STAFF PANEL

STEPHEN BOWLER, Office of Energy Projects

ALLYSON CONNER, Federal Energy Regulatory  
Commission

MICHAEL PINCUS, OGC, FERC

FRED WINCHELL, Louis Berger

Also RAMYA SWAMINATHAN, Free Flower Power

JON GUIDROZ, Free Flower Power

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Paul Thompson, Attorney	34
Stephen Gendron, Baton Rouge	35
Z. Dave DeLoach, DeLoach Marine Services	36
Dick Lamp, Architect	37

## P R O C E E D I N G S

1  
2 MR. BOWLER: Thank you for coming out. I'm  
3 Stephen Bowler from the Federal Energy Regulatory  
4 Commission, and I'm here opening up the meeting on the Free  
5 Flow Power, Mississippi River Lead Hydrokinetic Projects  
6 here in Scotlandville, near Baton Rouge, Louisiana, April  
7 30, 2009. And I will be doing some introductions,  
8 introducing you to the Federal Energy Regulatory Commission  
9 and our process for considering proposals like the one that  
10 Free Flow Power has made, and how we review those proposals,  
11 and ultimately if we decide to authorize the project, how  
12 that works.

13 I'll talk about the purpose of this process we  
14 call scoping; how we're working with the Corps of Engineers,  
15 who have a particular role in this process, and the schedule  
16 for our Environmental Impact Statement, what information  
17 we're requesting. And part way through the talk I'll stop  
18 and let the Free Flow Power staff who are here explain the  
19 details of their project to you, and I will take a few  
20 questions on the project proposal that you can ask them  
21 directly. And then I'll wrap up with a few more points  
22 about our Commission's process, and we'll allow formal  
23 statements into the record. We have a court reporter here  
24 today to keep a record of this meeting, and everything that  
25 we do at the Commission is on the public record. All the

1 information we take in from the public and that we use in  
2 our decisions is part of a public record, and I'll talk  
3 about how you can get information into that record and  
4 access it.

5 I'm the co-coordinator of this project, and my  
6 co-coordinator is Sarah Florentino; she's back in Washington  
7 while I'm here this week, and then next week she'll be going  
8 to Memphis and St. Louis while I'm back in the office. And  
9 with us here today are Allyson Conner who is a recreation  
10 specialist with the Commission. We review these projects  
11 with interdisciplinary teams. And also Michael Pincus, he's  
12 with our Office of General Counsel. And we have right now  
13 three or four other staff on the project in the office, and  
14 we also have parallel support from a consulting firm, Louis  
15 Berger Group; and I have three of them on here, you were  
16 here last night. But today we have Fred Winchell with us  
17 who is the project coordinator for Louis Berger. And they  
18 allow us to manage the workload on an intense project like  
19 this and also bring in specialists in particular areas of  
20 technical interest.

21 (Slide)

22 This schedule has actually shifted as of public  
23 notice that's going out today that my boss signed yesterday.  
24 We've added sixty days to the deadline for the comments that  
25 we're requesting in the scoping process. And so originally

1 the scoping process, all the comments were due May 15th,  
2 that's been extended to July 14th. And I'll talk more  
3 about what we're asking for in terms of comments.

4 But I'd like to give you a birds-eye view of our  
5 process, and explain some of the points at which we'll be  
6 back for public meetings, and opportunities to have input to  
7 that process.

8 The Federal Energy Regulatory Commission is  
9 structurally in the Department of Energy, but it truly is an  
10 independent commission; it's run by five commissioners who  
11 are appointed by the president and are confirmed by the  
12 Senate, only three of whom can be from the same party. And  
13 right now we have four because of the transition, but those  
14 are the decision makers for the Commission, and they serve  
15 staggered terms, and they're independent.

16 We serve as staff to them, making  
17 recommendations, doing analysis for them, preparing  
18 documents, and essentially supporting their decision  
19 process.

20 The Commission regulates energy industry in the  
21 United States, or sectors of it, including the wholesale  
22 electric market, electric grid interconnections, and then  
23 the office work in does infrastructure structure siting  
24 including oil and gas pipelines, some electric transmission,  
25 liquid natural gas terminals and the oldest part of the

1 Commission's responsibility and the area we're talking about  
2 today is non-federal hydropower projects in the United  
3 States. Basically almost all hydropower that's not Corps of  
4 Engineers, Bureau of Reclamation, other federal agencies.

5 Of course the project today that we're talking  
6 about is a new area of hydropower that we call  
7 hydrokinetics. We define it as energy generated from water  
8 without the use of the head behind a dam. And that includes  
9 wave energy, tidal energy, ocean currents and what we're  
10 talking about today, river currents using hydrokinetic  
11 devices.

12 The Commission has been regulating hydropower  
13 since 1920. In 2003 we adopted a set -- a new process in  
14 our regulations which is called the integrated licensing  
15 process or the ILP. I'll try to use as few acronyms as  
16 possible. But this was a new process that was worked out  
17 negotiating with a lot of stakeholder groups and other  
18 agencies, and state interests; and the concept was both to  
19 speed up a process that had a reputation for being long, and  
20 also to get the stakeholder issues out as early as possible  
21 so that they could be worked out at that time when there was  
22 more flexibility in the design and orientation of the  
23 project rather than bringing things in later when it was  
24 harder to change things.

25 So the key elements to the integrated licensing

1 process are that there's an application that comes in that  
2 is actually what the Commissions review; but in the  
3 integrated licensing process the prefiling process before  
4 that application even comes in is very intense. The  
5 Commission Staff are heavily involved in this process as  
6 soon as the prefiling stage starts; and that stage started  
7 for Free Flow Power on January 15th when they filed what's  
8 called a pre-application document, essentially a description  
9 of their proposal and a review of the existing information  
10 on the sites and issues that they're faced with and that  
11 they're proposing to develop power in.

12 After that pre-application document comes in, we  
13 actually do the scoping, which is a requirement of the  
14 National Environmental Policy Act, and what we're here  
15 partly for now. We do that in the prefiling phase, which is  
16 a little bit unusual in the National Environmental Policy  
17 Act; often it's done after the application, but by doing it  
18 this way we get the issues out early.

19 And then we have a very formal process of study  
20 of negotiating the studies that need to be done to prepare  
21 the application, and so we ask for study requests; the  
22 developer makes a proposal in response to those requests  
23 that come from the various stakeholders and from us. Then  
24 there's sort of an informal negotiation process, at the end  
25 of which the developer revises their proposal based on those

1 negotiations, and then the stakeholders can comment again to  
2 us about if they have remaining concerns about the study  
3 proposal; and we as the authorizing agency make a  
4 determination about what studies need to be done and what  
5 the schedule will be. Then everybody knows what studies to  
6 expect and has a clear understanding of the schedule.

7 The studies are carried out, and then the  
8 application comes in and then we start into the draft  
9 environmental impact statement in this case. We'll release  
10 a draft; we'll actually come down to the area again for the  
11 study determination meetings, and then we'll come down again  
12 for the draft environmental impact statement meetings to  
13 hear comments from people in the area; and also you can file  
14 things with us through the mail and electronically.

15 After we get the comments on the draft  
16 environmental impact statement we'll then finalize it, and  
17 essentially that document is our staff -- it complies with  
18 the National Environmental Policy Act, but under the Federal  
19 Power Act that document is our advice to our commissioners.  
20 It's our recommendation on what we suggest that they,  
21 whether they authorize it and with what conditions. And  
22 then if the Commission decides to authorize the project,  
23 they do so through a license which they issue, and which has  
24 articles in it which describe the conditions of the license;  
25 and that license serves the purpose that other agencies use

1 the title of Record of Decision.

2 So in this project, the tentative schedule,  
3 basically you can look at all these dates and move them back  
4 roughly two months. We'll be finalizing the schedule in our  
5 Scoping Document 2, which will come in response to what we  
6 hear at these meetings.

7 I mentioned the integrated licensing process.  
8 There's also a concept in the Federal Power Act called a  
9 preliminary permit, and that comes before the licensing  
10 process, and it actually doesn't permit any construction or  
11 provide any property rights, but it does provide the  
12 developer priority of application, which means that they can  
13 bother doing all this preparation of their license  
14 application. The site is protected for them from other  
15 developers coming in and applying for a license on the same  
16 site, as long as they're doing their due diligence towards  
17 the license application.

18 As I said, the integrated licensing process is  
19 very intensive, and Free Flow Power has 55 of these  
20 preliminary permits between St. Louis and New Orleans. It  
21 would be quite a challenge to process all 55 through the  
22 integrated licensing process, and we've allowed Free Flow  
23 Power -- we've accepted a proposal that they made to treat a  
24 portion of the sites as lead project sites. Originally it  
25 was four, and through negotiations with Fish & Wildlife

1 Service, it was expanded to seven.

2 Those lead sites, the concept is that they're  
3 representative in some ways of the other sites, and that  
4 some of the prep work and consultation to support the  
5 studies and information gathering for the other sites can be  
6 done through the lead sites. The other 48 sites are being  
7 handled through one of our older processes, which is  
8 essentially a more back-loaded process. So we're using a  
9 front-loaded process on the lead sites and with the hope  
10 that we can gain some efficiencies in applying that  
11 information to the slightly more back-loaded process for the  
12 other sites.

13 It's important to note that the other sites will  
14 get scoping, and we'll have environmental analysis as well;  
15 so those sites aren't in any way reduced in the amount of  
16 opportunity for public comment or analysis that they'll get.

17 So that's the birds-eye view of the process. The  
18 purpose of the scoping meetings is to comply with the  
19 National Environmental Policy Act and gather the information  
20 necessary for that and for several other federal statutes,  
21 and for the Federal Power Act. And it's particularly, in  
22 our Scoping Document 1 which we released on March 16th, we  
23 gave a preliminary list of issues and the scope of those  
24 issues, and we're now here to find out if the stakeholders  
25 have other issues that they think should be in the process

1 or if they have other ideas on the scope of those issues.

2 The Federal Power Act was passed in 1920; and by  
3 that time the Rivers and Harbors Act, which gives the Corps  
4 of Engineers authority over navigation and waters of the  
5 U.S. have been in place for decades since the 19th Century.  
6 And the Congress actually recognized that there was a  
7 potential jurisdictional conflict, so they resolved it in  
8 the Federal Power Act by essentially letting the Corps of  
9 Engineers exercise their navigation authority through the  
10 Federal Power Act. So they have mandatory conditioning  
11 authority for the navigation issues in the license that the  
12 Commission, any license the Commission would issue for this  
13 project.

14 And the Corps is working with us to make sure  
15 that the information is developed for the analysis of the  
16 navigation issues, and this is a statement from Jeff Artman  
17 of the Mississippi Valley Division, which I will read on  
18 their behalf:

19 The U.S. Army Corps of Engineers supports the  
20 development of renewable energy projects where  
21 these projects are feasible, and in the case of  
22 the Mississippi River, where these projects are  
23 compatible with Corps missions of navigation,  
24 flood risk management, environmental stewardship,  
25 and recreation. The Mississippi Valley Division

1 of the Corps of Engineers has provided comments  
2 to FERC and Free Flow Power regarding the  
3 hydrokinetic projects being planned for the  
4 Mississippi River. The Corps will continue to  
5 work with FERC and Free Flow Power in the future  
6 to resolve these comments.

7 So the information that we're asking for today and through  
8 July 14th is again significant environmental and competing  
9 use issues, other river use issues, that should be addressed  
10 in our environmental impact statement. And study requests  
11 for studies that are needed to develop the information to  
12 analyze those issues in the environmental impact statement.

13 In our regulations, we ask that people address  
14 seven criteria in those study requests, which helps us have  
15 a rational basis for making decisions in our determination  
16 about which studies should be required where there are  
17 differences of opinion.

18 It's important, if you have information about the  
19 river that you think would be helpful to the Commission in  
20 analyzing the issues and making decisions, it's important to  
21 get that into the public record so that it can be used in  
22 our decision making. So we ask that if you have local  
23 knowledge, personal knowledge, records that you think would  
24 contribute to the analysis, that we ask that you file those  
25 with us.

1           We also look, are required by statute to look at  
2 resource plans and proposals in the project area,  
3 particularly in certain category plans that are filed with  
4 us or can be filed with us; and we certainly want to know  
5 about future activities that we should be anticipating.

6           And comments, I'll just mention quickly on your  
7 seats there were some materials including the Scoping  
8 Document 1 that I mentioned, which has my contact  
9 information in it; and my co-coordinators, and the tentative  
10 list of issues. There's a brochure on using our eLibrary,  
11 eSubscription system, and you can get into the public record  
12 through that electronically. You can also subscribe to  
13 these project dockets and you'll get an e-mail anytime  
14 anything is filed, any new information; and if the title of  
15 the filing seems to be of interest to you, you can follow  
16 the link to get to the document.

17           There's also a bound document which actually has  
18 two -- you can read it from either side. One side is our  
19 regulations on the integrated licensing process, and the  
20 other side is some sort of advice and experience on working  
21 through that process. And the criteria are in those  
22 materials.

23           As far as practically getting the information to  
24 us today, speaking into the record as an opportunity, if you  
25 have something written you can hand it to our court

1 reporter. You can file things by mail with the Commission  
2 or electronically.

3 So at this point I'll let Ramya Swaminathan from  
4 Free Flow Power explain the project details to you; and when  
5 she concludes -- Yes, sir?

6 AUDIENCE: Just one quick question.

7 MR. BOWLER: Yes.

8 AUDIENCE: If we chose to subscribe for updates  
9 on-line, like you said through the --

10 MR. BOWLER: eSubscription.

11 AUDIENCE: -- process, I see project numbers, I  
12 don't see a docket number.

13 MR. BOWLER: The docket numbers are on the front  
14 of the Scoping Document 1. And I think there might be a  
15 sticker on the back of the brochure that has -- yes, there's  
16 a sticker on the brochure that has them.

17 And I'll point out that --

18 AUDIENCE: The docket number and project number.

19 MR. BOWLER: Yes, yes. Exactly.

20 And at this point the seven projects are being  
21 handled together, so if you subscribe to one, you're going  
22 to get the information, unless there's a glitch, for any of  
23 them. But over time they could get site-specific filings;  
24 and so you certainly want to make sure you're subscribed to  
25 the one that's of the greatest interest to you. And if you

1 want to be really thorough, you could file on all seven of  
2 them, but sometimes you'll get seven e-mails on the same  
3 thing.

4 Are there any other procedural questions or  
5 filing questions before Ramya comes up?

6 Okay.

7 MS. SWAMINATHAN: Good morning and thank you very  
8 much for coming out this morning. I wanted to take a minute  
9 just to tell you about our projects, including as Stephen  
10 mentioned, all seven of them, the lead sites and they're  
11 proposed between New Orleans all the way up to St. Louis.

12 I'm not going to linger a whole of time on this  
13 page. I think Stephen mentioned most of this information.  
14 We have 55 proposed project sites. They extend from a  
15 little bit below New Orleans all the way up to St. Louis.  
16 They're in seven states. And each of the sites range in  
17 length between 2 and 16 river miles.

18 The FERC permits for these proposed projects were  
19 issued in early 2008 and in early 2009 on January 15, we  
20 filed our pre-application document and Notice of Intent.  
21 That kicked off the scoping process which we're currently in  
22 the middle of for these seven sites.

23 We believe that hydrokinetics is a very  
24 compelling alternative for renewable energy in this region;  
25 at least partially for natural endowment reasons. Meaning

1 that the Southeast, and Louisiana in particular, is simply  
2 not geographically endowed with some of the other resources  
3 like wind and solar that make those compelling alternatives  
4 in other parts of the country. And what this region does  
5 have, directly at its doorstep, is the Mississippi River  
6 which is a tremendous resource and a tremendous source of  
7 energy.

8 (Slide)

9 Our proposal, as Stephen mentioned, is to  
10 submerge turbines underneath the surface of the water in the  
11 Mississippi River, below the navigational channel, and this  
12 page gives you a sense of the technology with which we would  
13 like to do that.

14 The page is divided into two sections. On the  
15 right hand side of the page, you'll see that there's a  
16 photograph of a prototype model. We developed a one meter  
17 model, and that was tested in a lab environment up in  
18 Massachusetts. It generates about 10 kilowatts in flows of  
19 three meters a second.

20 Based on the engineering results of this test and  
21 incorporating other design features based on extensive  
22 consultations with various kinds of people, including  
23 stakeholders and engineering design folks, we devised and  
24 designed a next generation which is currently in fabrication  
25 right now. That design is three meters in outside diameter

1 and it generates 10 kilowatts of output in flows of two and  
2 a quarter meters a second.

3 The middle part of this page shows you an  
4 exploded view, just so you can take a look at it. I'm going  
5 to skip some of the text here because it's repeated on the  
6 next page, in terms of key design features.

7 So to tell you a little bit about the turbine, it  
8 has a low tip speed ratio which should mitigate fish injury  
9 from passage through the device. This device is intended to  
10 be deployed; it was designed for the Mississippi River, it's  
11 intended to be deployed such that it produces electricity  
12 from ambient river flows rather than a head environment from  
13 a dam. And because of that, there's de minimums pressure  
14 gradient, there's very little difference in velocity regions  
15 that would cause turbulent shear stress to fish; and there  
16 are no small gaps that could cause grinding injury. The  
17 distance between the fixed and the moving part of the  
18 turbine is designed to be one meter apart from each other.

19 As I mentioned before, the devices, the turbines  
20 would be installed and deployed beneath the navigation  
21 channel, off the river bed, and I've got a slide a little  
22 later on that gives you a sense of what that might be. With  
23 relatively little onshore equipment consisting largely of  
24 cabling and onshore substation equipment. And there's no  
25 chemical lubrication that would be used, and the bearings

1 are hydrodynamic, which means they are lubricated by water.

2 We wanted to talk a little bit about the  
3 deployment strategy that we would use for these turbines.  
4 Our intent is to drive pilings into the river bed and then  
5 deploy turbines off of those pilings. In this area of the  
6 river and south, where the river is in its deep draft area,  
7 those arrangements on the pylons could be vertical. You'll  
8 see some of these pictures are intended to show you what it  
9 might look like if turbines were stacked on top of each  
10 other.

11 As you move further up the river, it gets  
12 shallower, the further up you get toward St. Louis, and  
13 depths necessary to achieve such vertical arrangements may  
14 not be available; and therefore we're certainly interested  
15 in considering arrangements where the turbines are arranged  
16 in a more horizontal fashion.

17 For operation and maintenance, the protocols that  
18 we are working to develop are basically swift and modular,  
19 and use very standard marine equipment and procedures. The  
20 idea is that for servicing, you'd have a barge with service  
21 equipment on it that would lift a sleeve of turbines right  
22 off a piling, service those, and then when the servicing was  
23 done, any replacement for defective turbines or ones that  
24 need replacement are done, that barge would then with a  
25 crane lift that sleeve directly back onto a preexisting

1 piling, the piling that had been driven into the river bed.

2 (Slide)

3 I wanted to give you a sense of scale, of  
4 deployments. If you can see some green dots in the center  
5 of this page, those are intended to represent, and they're  
6 to scale; I believe there are 32 pilings, each piling having  
7 six turbines on it. So each of those individual dots is one  
8 piling with six turbines. The distance between the two rows  
9 of pilings is 75 feet and the distance between each piling  
10 is 50 feet, on a horizontal basis. So that gives you a  
11 sense of scale.

12 I'm not going to linger too long on these slides.  
13 This presentation is available on our website, which is  
14 [www.Free](http://www.Free-Flow-Power.com)  
15 [-Flow-Power.com](http://www.Free-Flow-Power.com). And what I just wanted to put out was a  
16 quick description, each of these seven sites has been chosen  
17 as a lead site because these seven sites together are  
18 intended to represent the broad slate of the 55, the  
19 proposed projects, and therefore have a mix of  
20 characteristics that are capture that representation,  
21 essentially. So some of these sites are in urban areas,  
22 some of them are in more rural areas, some of them have  
23 highly industrial and commercial facilities with very close  
24 connections, either to commercial-industrial facilities  
25 and/or grid interconnection. They come from a variety of

1 habits, which the habit notes on the side; and they're in a  
2 variety of jurisdictions as well, and the protocols that are  
3 used, for example, for regulating works by the Army Corps  
4 districts are different across the various jurisdictions.

5 Finally, we've spent a fair amount of time  
6 consulting with stakeholders in the preparation of the pre-  
7 application document, and part of that process, part of the  
8 intent behind that process was to discover issues and  
9 concerns with respect to particular resource areas that may  
10 be things that particular parties want to make sure are  
11 addressed in the process of designing the deployment of  
12 these projects; and some of the resource areas that have  
13 come up to us, to our attention as being very important, are  
14 navigation, water quality, aquatic and terrestrial species,  
15 and cultural and historic sites, and we just wanted to note  
16 that.

17 As I mentioned, I know this is a dense page, as  
18 are the previous two. If you have any interest, I can  
19 certainly send you a copy, but it is also available on our  
20 website.

21 MR. BOWLER: So if you have opinions you want to  
22 express, you'll have your opportunity for that in a few  
23 minutes; but if you have questions about the details of the  
24 proposal, it's an opportunity while the developer is here to  
25 ask some of those if the presentation triggers some

1 questions or whatever.

2 Yes, sir?

3 AUDIENCE: I have several questions, as a matter  
4 of fact. Such as, what's the length of the construction  
5 stage at each one of those sites, and how many days will  
6 navigation be impacted? And is that a continuous time  
7 frame, is navigation expected to be closed?

8 I can read all my questions at once, or you can  
9 answer them individually; I don't know --

10 MR. BOWLER: Could it be summarized as --?

11 Could the question be summarized as, what do they  
12 anticipate the installation and maintenance scheduling to be  
13 like?

14 AUDIENCE: That's a good summary.

15 MS. SWAMINATHAN: We certainly understand the  
16 concern about navigation, and the importance of this river  
17 as a commercial waterway. I think at this point it's  
18 premature for me to say exactly what the construction and/or  
19 the installation schedule would be; but based on our  
20 consultations with the Corps, the Coast Guard and other  
21 river users like some of the pilot groups, the specific  
22 concern about potentially affecting navigation has been  
23 made loud and clear, and our response to it is we, in all  
24 likelihood the construction-installation phase will be done  
25 in a phased manner so that there isn't a need to deploy all

1 turbines at the same time. And we will work with the Corps,  
2 the Coast Guard, and all other stakeholder groups to devise  
3 a schedule that -- you know, it impacts navigation the least  
4 possible.

5 We hear your concern, and it's been made clear to  
6 us.

7 AUDIENCE: I assume that once one of these  
8 projects has been put into place and you find later that it  
9 has some adverse effect on say navigation or some other  
10 river use, is there ever any opportunity for moving it?

11 MR. BOWLER: In a commercial scale, a normal  
12 hydropower license, we try obviously to work out and analyze  
13 those issues ahead of time; but there's always the  
14 possibility of the unforeseen, and also there's also the  
15 possibility of sometimes there's a range of effects or  
16 something that you can anticipate that that range might  
17 occur, but you need to do some more analysis in the license  
18 term to finalize things.

19 So there's two strategies that are available; one  
20 is if there's something that's adjustable, and sometimes we  
21 can sort of bracket the range of potential -- and this is an  
22 example I'll take from the conventional hydropower realm, is  
23 the flow release from a dam for a fish species. If we know  
24 that we're not in the licensing phase, we need a little more  
25 information to finalize exactly what that flow might be. We

1 can bracket it within a range and have an adaptive  
2 management strategy, and then after the license is in place,  
3 make adjustments.

4 That's one way things can be handled, but if  
5 there's something that's totally unforeseen that's a  
6 problem, there's always a potential to reopen the license  
7 and amend it. And certainly in the case of the economic  
8 activity related to navigation of the Mississippi River,  
9 that's obviously something that would be dealt with if it  
10 was significantly impaired by an unforeseen characteristic  
11 of a project or something that happened down the road.

12 Any other questions about the proposal?

13 AUDIENCE: I wonder if you could just cross this  
14 bridge when you come to it; I didn't see anything on those  
15 clusters to shunt debris, both floating and submerged.

16 MR. BOWLER: Sure.

17 AUDIENCE: Another consideration is the scouring  
18 effect when the water gets deeper. Rule of thumb is, for  
19 every foot the river goes up, the bottom goes down a foot.  
20 So the people who build docks have to drive their piles when  
21 the water table is at high level. So they get down into the  
22 bottom, the bottom won't be scoured out.

23 MR. BOWLER: Two questions, repeating them for  
24 the recorder. One is, how are they planning to handle  
25 debris and the other is how are they planning to handle the

1 sediment movement and scour on the bottom.

2 Chris isn't here, your technical guy, but --

3 MS. SWAMINATHAN: I'll give it a shot.

4 Given this river and these conditions, debris is  
5 obviously something we're very concerned about. I think  
6 debris comes -- to us as we analyze debris, it really takes  
7 three forms. There's debris along the bottom of the river  
8 where our pilings would be, and a lot of that might be very  
9 large; there's debris that goes on the surface that in all  
10 likelihood we really wouldn't be affected by, given that  
11 we'd be below the surface of the water; and then there is,  
12 ultimately what we're very concerned about is mutually  
13 buoyant debris, which means the debris that's in the water  
14 column that directly might affect our turbines.

15 AUDIENCE: One other question I had in connection  
16 with this, they moor barges along the banks, so we have to  
17 have some arrangement -- not just in navigation.

18 MS. SWAMINATHAN: I'm sorry, the question is they  
19 moor barges on the --

20 AUDIENCE: They park strings of barges along the  
21 banks.

22 MS. SWAMINATHAN: Right.

23 AUDIENCE: In other words, you have to have some  
24 arrangement, both with your connection to the bank, your --  
25 these people, where are they going to park their barges?

1 Not just navigation.

2 MS. SWAMINATHAN: Right, absolutely. So I guess  
3 I'll add that as the third concern and come back to it, if  
4 that's okay.

5 So we absolutely have, are very concerned about  
6 debris, and it's a serious feature in the design of the  
7 turbines.

8 To some extent we handle the design of the  
9 turbine by choosing materials that would stand a little bit  
10 of debris impact, and there are obviously kinds of debris  
11 that you really can't design for to withstand; and in the  
12 cases that you really can't, that becomes more of an  
13 insurance and a salvage issue for us as a business matter.

14 So absolutely very concerned about debris, and  
15 it's a critical aspect of what we're designing for within  
16 the device itself, but also in the deployment strategy with  
17 respect to conversations with our insurer, and devising  
18 salvage plans.

19 The second question was sediment, which is a very  
20 interesting point. And I think there are largely two issues  
21 with respect to sediment; it's sort of how does suspended  
22 sedimentation in the river as it currently stands affect our  
23 turbines; and part of what we want to make sure we do is get  
24 enough of a distance off the river bottom so that we are  
25 escaping bottom friction and not being buried by sediment,

1 as it is. And we think that distance is about ten feet. So  
2 in all circumstances, the lowest turbine we could likely  
3 have would be at least ten feet off the bottom to escape  
4 sedimentation and siltation as it affects our deployment.  
5 And how any turbines we put in the water may affect, in  
6 turn, the sedimentation of the river; and that's definitely  
7 something we're concerned about.

8 There are a lot of modeling approaches to that;  
9 actually the University of Mississippi has a very well known  
10 fluid model that basically looks at flow velocities and  
11 suspended sedimentation, and we're actually in conversations  
12 with them, looking at modeling approaches to this issue.

13 The third question about moored barges along the  
14 sides of the river, we absolutely hear that. We obviously  
15 couldn't onshore directly into the path of a barge that had  
16 been moored there, and that's definitely something we will  
17 take into consideration.

18 MR. BOWLER: I want to make sure we have enough  
19 time for comments. Two other people had their hands up;  
20 we'll take two more detailed questions and then we'll move  
21 on. So first the gentleman in the green.

22 AUDIENCE: Have you asked for or have you been  
23 granted domain over a portion of the river, or can other  
24 power producers encroach on the area? What is the legal  
25 process?

1           It's my understanding that the government is  
2           granting domain to developers over portions of the river,  
3           ten, twelve miles. Do you have that, or are you asking for  
4           that? Are you doing this on multiple sites on the river?

5           MR. BOWLER: I guess without a specific other  
6           competing or potential project, it's hard to respond in the  
7           hypothetical; but I guess what I would say is that it's very  
8           common to have multiple use projects, hydropower dams, and  
9           they function off the same structure. They might not both  
10          be energy projects, but to the degree the things are  
11          compatible, the Federal Power Act doesn't exclude things  
12          from being in the same vicinity or area. Those things can  
13          be worked out; and that's about as much as I can say about  
14          it.

15          There is a project boundary that's defined, and  
16          there are restrictions within that; but there are often  
17          other things going on in that boundary, and this  
18          hydrokinetic realm is a little bit different than a  
19          traditional dam; so the things might be handled a little bit  
20          differently than they are with a ring around the dam.

21          AUDIENCE: But Hydro Green has been granted  
22          domain over a large portion of the river in Vicksburg.  
23          Nobody else need apply, in essence. That's the question  
24          that I'm asking.

25          MR. BOWLER: The preliminary permit excludes

1 other developers from proposing a project, basically the  
2 same type of project in the same space.

3 AUDIENCE: No matter the merits.

4 MR. BOWLER: It depends on how the applications  
5 are filed and when they're filed, whether the merits -- if  
6 you file a timely competing application, the merits will be  
7 considered.

8 AUDIENCE: And timely means first come first  
9 serve?

10 MR. BOWLER: Timely means within 60 days,  
11 generally, of the filing of the initial application.

12 Yes, ma'am.

13 AUDIENCE: The river domain, is it considered  
14 federal, state? I'm talking about the center of the river.  
15 I noticed on the picture you had the turbines in the middle  
16 of the river. I assume you'd put some on the sides, on the  
17 banks, et cetera.

18 What part of the domain belongs to the state, or  
19 is for the state and everyone; what part is considered  
20 belonging to property owners along the river? And how does  
21 that affect the property owners financially, will they get  
22 any revenue from it, or et cetera?

23 MR. BOWLER: The property issues are ultimately  
24 handled through State law, but under the Federal Power Act  
25 it's a federal authorization for a development project, and

1 the license comes with eminent domain. In many cases, those  
2 issues are worked out in other ways, however. And that's  
3 again without sort of specifics about as much as I can sort  
4 of anticipate in terms of describing the --.

5 AUDIENCE: And like at a house on a street, you  
6 won't have it on the street, and I didn't know how that  
7 affected a riverway or a waterway; how does a property owner  
8 -- what is their value in that riverfront? What I'm asking,  
9 do they have any power over -- you know, you can lease it to  
10 somebody to put a barge or a boat or something there; how is  
11 it going to be in this situation where this is being  
12 licensed by the government to put the power there.

13 MR. BOWLER: First of all, you have the  
14 opportunity to enter information into the discussion and  
15 make your voice heard so that any concerns you have will be  
16 addressed in analyzing the project. And second of all, I  
17 think you and the developer have the opportunity to talk and  
18 work things out, and then to the degree that they -- if they  
19 aren't worked out, to talk to us about your concerns and get  
20 that into the record and get that discussed.

21 I mean, in the end, in a case of a conventional  
22 hydropower project where there's a dam and properties around  
23 the dam, the Federal Power does give eminent domain, but it  
24 requires compensation through the state process. However,  
25 in a case like this, from what I've seen of the Free Flow

1 Power proposals, there's a lot of flexibility about where  
2 they bring the transmission lines on shore, so it seems to  
3 me like there's a lot of opportunity for negotiating and  
4 working out alternatives that would minimize the impacts on  
5 riverside land owners.

6 Obviously I can't speak to a specific case, but  
7 from what I've seen in the site visits the last two days,  
8 they're talking about I think one transmission line every  
9 one or two miles something, and there's a lot of places to  
10 come ashore in a distance like that.

11 AUDIENCE: Just to go over another question, how  
12 much onshore land is required to service these sites?

13 MS. SWAMINATHAN: We anticipate the onshore  
14 infrastructure, as Stephen said, we think that we probably  
15 will need a shore substation between every half mile and  
16 every two miles depending on how many turbines are in any  
17 particular area. And the onshore facility for that, we  
18 expect to be relatively small; something like 80 by 10, you  
19 know, a standard substation with kind of a chain link fence,  
20 gravel yard, that kind of thing.

21 AUDIENCE: I have a technical question on your  
22 presentation, turbines.

23 MS. SWAMINATHAN: Yes.

24 AUDIENCE: Is your generator self-submerged and  
25 attached to the turbine, or are you transmitting power

1       hydraulically? How are you moving the power from the  
2       turbines to the shore?

3               MS. SWAMINATHAN: There will be cabling.

4               MR. BOWLER: So the question is, how is the power  
5       moved from the turbine to the shore.

6               AUDIENCE: Generating --

7               MR. BOWLER: And where is the generator.

8               AUDIENCE: -- directly attached to your turbine?

9               MS. SWAMINATHAN: Yes.

10              AUDIENCE: You're using submerged generators.

11              MS. SWAMINATHAN: Yes. It's directly in the  
12       turbine, around the outside.

13              AUDIENCE: Cowling, similar to the New York --

14              MS. SWAMINATHAN: I'm sorry?

15              AUDIENCE: Cowling, similar to the New York  
16       experiment. Never mind.

17              MR. BOWLER: So I'd like to stop the technical  
18       questions there so that we make sure we have time for  
19       comments and questions about procedure. Let me switch back  
20       to my presentation.

21              So in our preliminary estimate based on reading  
22       the pre-application document and the existing information,  
23       we've identified what we use as a starting place for our  
24       description of the issues; and in very general terms, we're  
25       including water quality, fishery resources, wetland and

1 terrestrial resources, commercial navigation and recreation.

2 We have to define the geographic scope of the  
3 issues; and for most issues we're talking about the Middle  
4 and Lower Mississippi River; for navigation, we're talking  
5 about the scope extending to the extended navigation,  
6 commercial navigation.

7 The temporal scope we're required to define as  
8 well, and we're defining that as the past, present and  
9 foreseeable future actions, 30 to 50 years, which is the  
10 term of an original license under the Federal Power Act.

11 And in this part of the world, I don't think  
12 there's much need to talk about being respectful; everywhere  
13 we go we're impressed by how pleasant people are, and  
14 helpful, in Louisiana. And because of the small number of  
15 speakers, I won't put a restriction on the time limit unless  
16 we start really getting on in time.

17 What we'll do is we'll go through the speakers as  
18 they signed in, and give everybody who wants to speak a  
19 chance to speak, and then I'll ask if there's anybody else  
20 who didn't sign in who'd like to make a comment. I'd  
21 appreciate it if you would come up to the microphone so that  
22 the recorder can get a good record of the meeting. Please  
23 spell your name and state your affiliation if you have one  
24 foreign, and also if you are using any acronyms, please make  
25 sure you say what they mean.

1                   And with that, I will start with Charles Perillo.

2                   MR. PERILLO: Well, I've got no comment.

3                   MR. BOWLER: Davis Sanders, Jr.?

4                   MR. SANDERS: I don't have anything appropriate;  
5 I've already asked my questions.

6                   MR. BOWLER: Okay. Paul Thompson?

7                   MR. THOMPSON: Thank you, Mr. Bower and  
8 representatives of FERC, consultant. My name is Paul T.  
9 Thompson.

10                   Let me say first off that I'm an attorney, so you  
11 can be suspect of any comments I make right off the bat --

12                   (Laughter)

13                   But I'm here with Mr. W.W. Stone, who is a  
14 developer of a similar technology, although on a much  
15 smaller scale to that that Free Flow is seeking a permit  
16 for. And we're not familiar with the Free Flow project in  
17 detail, neither are we adjacent property owners; so our  
18 position is simply to speak from another person who is  
19 interested in developing energy from a hydrokinetic source  
20 that does not use resources which are not readily  
21 replaceable or redeveloped.

22                   We just generally support these types of projects  
23 and this one in particular because it's local here to  
24 Louisiana and because it has so much similarity to the  
25 research and develop and Mr. Stone is trying to do. You

1       might say he's trying to build a better mousetrap, a more  
2       efficient device. And we like to interact with other people  
3       that are in the same field of study and the same field of  
4       development.

5                So we merely want to provide a general statement  
6       of support for this project, to be placed in a well-  
7       regulated environment in a way that enables the further  
8       development of this technology and devices, but in a well-  
9       regulated and safe manner. Thank you.

10               MR. BOWLER: Thank you.

11               Stephen Gendron.

12               MR. GENDRON: I didn't realize that I'd be  
13       speaking today, but I just really want to put something on  
14       the public record. My name is Stephen Gendron, (spelling),  
15       I'm a resident of Baton Rouge and want to state my general  
16       support for the integrated licensing process. I think it's  
17       a good procedure for all the stakeholders involved to get  
18       the issues on the table ahead of time, because obviously in  
19       a project like this there's going to be a lot of concerns  
20       and a lot of technical hurdles, on the developer's part, on  
21       the local population. There's just a bunch of different  
22       stakeholders, and I support the process where it's an open  
23       process where people can get up and get those issues dealt  
24       with early, and also state my general support for the  
25       development of alternative energy for the state and for the

1 country; and I think we need to lend support to developers,  
2 and in an appropriate manner to try to explore alternate  
3 technologies; and in particular, this technology has a  
4 particular potential to benefit Louisiana.

5 So in general I'm in support of those goals, and  
6 I want to put that on the record.

7 MR. BOWLER: D. David Deloach.

8 MR. DELOACH: Z. Dave Deloach (spelling). I own  
9 DeLoach Marine Services in Port Allen, and I am a member of  
10 the American Waterways Operators and I operate tow boats and  
11 barges along the Mississippi River, so I have a particular  
12 interest in anything that's going to impact the shallow  
13 draft navigation system, and considering that all seven of  
14 these projects, six of them specifically are located in the  
15 shallow draft portion of the Mississippi River, I feel that  
16 the inland sector of the navigation system needs to have  
17 some direct consultation in the development and design of  
18 this, to be sure that it doesn't have any significant  
19 effect.

20 We move approximately 15 percent of the total  
21 goods transported in this country, and so any type of impact  
22 would have a significant impact on the transportation  
23 system; and we don't necessarily trust the expertise of the  
24 Corps of Engineers to make those judgments for us. So we  
25 would like to have some direct communication. Thank you.

1                   MR. BOWLER: Thank you. And I think that's the  
2 end of the people who signed up.

3                   Is there anybody else who thinks they signed up  
4 and I didn't call your name?

5                   Is there anybody who didn't sign up who now would  
6 like to make a comment to the record?

7                   AUDIENCE: I would, yes.

8                   MR. BOWLER: Yes, sir.

9                   MR. LAMP: My name is Dick Lamp (spelling). I'm  
10 a retired architect, and I've gotten involved in collecting  
11 energy as Mr. Stone and Mr. Thompson have. I have applied  
12 for a patent on a system that is quite viable. It's not a  
13 fixed system, and I manufacture it, deliver it to the site,  
14 drop an anchor, put a wire over.

15                   It's quite practical, it yields a great deal of  
16 energy, it's very inexpensive to manufacture. I haven't  
17 really attempted to deploy or to try, to go through the  
18 process. I made the first attempt yesterday and was rudely  
19 awakened to the fact that the federal government is granting  
20 domain to portions of the river. And if Mr. X gets a ten  
21 mile stretch, then he may develop all the hydraulic, the  
22 power from that section; Mr. Stone nor I could not deploy.

23                   This is an obstacle that I feel is a part of a  
24 federal bureaucracy that let's say deters the better  
25 development of a resource; i.e., flowing water. How to

1 remedy it, I don't know. If you have deep pockets then you  
2 can indulge in the bureaucratic procedures that come along.  
3 If you're a lone mad inventor, let's say -- I'm making light  
4 of myself. I have a company organized, and I have  
5 participants, engineers, myself, and all the required  
6 involvements. But I cite my observation, my first exposure  
7 on trying to deploy. And perhaps you can have some comment  
8 or somebody will have some observations on my observation.  
9 Thank you.

10 MR. BOWLER: Thank you.

11 Is there anybody else who would like to speak?

12 Are there any other questions about procedural  
13 things, about filing or getting information, or when we'll  
14 be back again? In person, that is.

15 If not, I would encourage you to file comments on  
16 the scoping document, on the pre-application document, and  
17 study requests by July 14th. I also encourage you, if you  
18 have questions you come up with after you leave today to  
19 call me or Sarah at the numbers in the scoping document.  
20 And also, we'll be around for a little while today if you  
21 have informal questions, we can try to answer them; and I'm  
22 sure that Ramya will as well.

23 So thank you very much for coming out, and with  
24 that I'll close the meeting.

25 (Thereupon, at 11 a.m., the scoping meeting

1 concluded.)

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