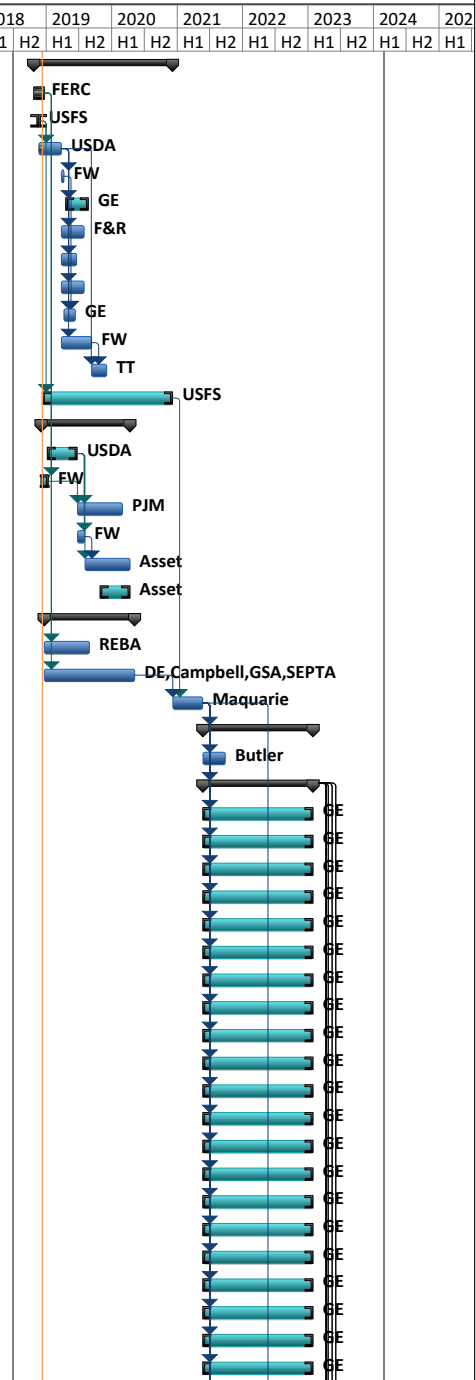


Preliminary Big Run Pump Storage Hydropower Project Schedule

ID	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Baseline1 Cost	2018	2019	2020	2021	2022	2023	2024	2025
								H1	H2	H1	H2	H1	H2	H1	H2
1	Pre-development PH1	555 days	Mon 10/22/18	Fri 12/4/20			\$228,500.00								
2	FERC Preliminary Permit	43 days	Mon 10/22/18	Wed 12/19/18		FERC	\$0.00								
3	USFS Initial Scoping Meeting	1 day	Mon 11/19/18	Mon 11/19/18		USFS	\$0.00								
4	Preliminary Funding for Project Feasibility	90 days	Tue 11/20/18	Mon 3/25/19	3	USDA	\$228,500.00								
5	General Plan	10 days	Tue 3/26/19	Mon 4/8/19	4	FW	\$10,000.00								
6	Engineering Optimization Studies	90 days	Fri 4/19/19	Thu 8/22/19	4	GE	\$0.00								
7	Geotechnical Studies	90 days	Tue 3/26/19	Mon 7/29/19	4	F&R	\$90,000.00								
8	Water Quality Studies	60 days	Tue 3/26/19	Mon 6/17/19	4		\$1,000.00								
9	Recreation Studies	90 days	Tue 3/26/19	Mon 7/29/19	4		\$7,500.00								
10	Preliminary Design Studies	45 days	Tue 4/9/19	Mon 6/10/19	4,5	GE	\$35,000.00								
11	Economic and Market Analysis	120 days	Tue 3/26/19	Mon 9/9/19	4	FW	\$35,000.00								
12	Project Feasibility Report	60 days	Tue 9/10/19	Mon 12/2/19	4,11	TT	\$50,000.00								
13	Federal Environmental Studies and Review (EIS)	520 days	Mon 12/10/18	Fri 12/4/20	3	USFS	\$850,000.00								
14	Pre-development PH2	355 days	Mon 12/3/18	Fri 4/10/20			\$0.00								
15	Funding for Exploration and Design	120 days	Mon 1/7/19	Fri 6/21/19		USDA	\$25,000,000.00								
16	LGIP Interconnection Request	30 days	Mon 12/3/18	Fri 1/11/19	2	FW	\$20,000.00								
17	Facility and System Impact Studies	180 days	Mon 6/24/19	Fri 2/28/20	16,15	PJM	\$300,000.00								
18	Exploration	30 days	Mon 6/24/19	Fri 8/2/19	15	FW	\$10,000.00								
19	Facilities Design, Engineering, and Approvals	180 days	Mon 8/5/19	Fri 4/10/20	15,18	Asset	\$3,000,000.00								
20	Cost Estimating and Financial Planning	120 days	Mon 10/28/19	Fri 4/10/20		Asset	\$70,000.00								
21	PPA Power Marketing Supply/Off-take Sales	360 days	Thu 12/20/18	Wed 5/6/20			\$0.00								
22	Wind and Solar Supply Contracts	180 days	Thu 12/20/18	Wed 8/28/19	2	REBA	\$350,000.00								
23	Big Run-PSH Off-take Contracts	360 days	Thu 12/20/18	Wed 5/6/20	2	DE,Campbell,GSA,SEPT	\$350,000.00								
24	Financial Close on Construction Funding	120 days	Mon 12/7/20	Fri 5/21/21	23,13	Maquarie	\$800,000,000.00								
25	BOP Procurement	440 days	Mon 5/24/21	Fri 1/27/23	24		\$0.00								
26	Facility Building	90 days	Mon 5/24/21	Fri 9/24/21	24	Butler	\$300,000.00								
27	Mechanical-Electrical Equipment	440 days	Mon 5/24/21	Fri 1/27/23	24		\$0.00								
28	Butterfly Valves, Accessories and Aux. Equipment	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
29	Pump Turbines (4 ea- 340/250 MW, 500 rpm)	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
30	Electronic Speed Governors	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
31	Main Inlet Spherical Valves	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
32	Unit Cooling Water System	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
33	Compressed Air System for Powerhouse	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
34	Dewatering and Drainage System for Powerhouse	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
35	Fire Detection & Fire Protection Equipment	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
36	HVAC System incl. Smoke Evacuation	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
37	Oil Handling System	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
38	Powerhouse Gantry Cranes	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
39	Butterfly Valve Gantry Cranes	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
40	Elevators	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
41	Material Handling Equipment	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
42	VA Dbl. Fed Asynchronous VS Generators w/SC Mode	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
43	Excitation System & Static Voltage Source Inverter	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
44	Isolated Phase Bus Duct	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
45	Generator Circuit Breakers	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
46	3-Phase GSU Transformers (? MVA-500 MVA)	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
47	Connections & T-line from GSU Transformers & Mt. Storm S	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
48	500 kV Bus Duct	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								



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								H1	H2	H1	H2	H1	H2	H1	H2
49	230 kV GСУ Transformers and Connectors (Option)	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
50	MV and LV Panels	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
51	DC Auxillaries and UPS	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
52	Communications Systems	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
53	Network Protection System	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
54	Auxillary Control & Protection System	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
55	Plant Computer Control & SCADA System	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
56	Indoor and Outdoor Lighting and Load Bank	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
57	Power and Control Network Cabling	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
58	Lightning Protection and Grounding System	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
59	Spare GСУ Transformers	440 days	Mon 5/24/21	Fri 1/27/23	24	GE	\$0.00								
60	Civil Equipment	30 days	Mon 5/24/21	Fri 7/2/21	24	Caterpillar	\$0.00								
61	TBM procurement	365 days	Mon 5/24/21	Fri 10/14/22	24	NFM	\$0.00								
62	Transportation Services Contract	120 days	Mon 5/23/22	Fri 11/4/22	24FS+260 days		\$7,000,000.00								
63	Construction	725 days	Mon 5/24/21	Fri 3/1/24			\$0.00								
64	Access Road Upgrades	30 days	Mon 5/24/21	Fri 7/2/21	24	Bechtel	\$0.00								
65	Shaft Construction	60 days	Mon 7/5/21	Fri 9/24/21	64	Bechtel	\$0.00								
66	Access Road 2	30 days	Mon 7/5/21	Fri 8/13/21	64	Bechtel	\$0.00								
67	Access Road 3	30 days	Mon 8/16/21	Fri 9/24/21	66	Bechtel	\$0.00								
68	Emergency Egress and Ventilation Tunnels	360 days	Mon 10/17/22	Fri 3/1/24	61	Bechtel	\$0.00								
69	Upper Intakes	360 days	Mon 10/17/22	Fri 3/1/24	61	Bechtel	\$0.00								
70	Lower Intakes	360 days	Mon 10/17/22	Fri 3/1/24	61	Bechtel	\$0.00								
71	Tailrace Tunnels (TBM)	360 days	Mon 10/17/22	Fri 3/1/24	61	J.F Shea	\$0.00								
72	Headrace Tunnels (TBM)	360 days	Mon 10/17/22	Fri 3/1/24	61	J.F Shea	\$0.00								
73	Headrace Surge Loops (TBM)	360 days	Mon 10/17/22	Fri 3/1/24	61	J.F Shea	\$0.00								
74	Headrace Distributer Tunnels (TBM)	360 days	Mon 10/17/22	Fri 3/1/24	61	J.F Shea	\$0.00								
75	Headrace valve chamber (TBM)	360 days	Mon 10/17/22	Fri 3/1/24	61	J.F Shea	\$0.00								
76	Pressure Shafts (TBM)	360 days	Mon 10/17/22	Fri 3/1/24	61	J.F Shea	\$0.00								
77	Pressure Tunnels (TBM)	360 days	Mon 10/17/22	Fri 3/1/24	61	J.F Shea	\$0.00								
78	Penstock Tunnels (TBM)	360 days	Mon 10/17/22	Fri 3/1/24	61	J.F Shea	\$0.00								
79	Draft Tube Tunnels (TBM)	360 days	Mon 10/17/22	Fri 3/1/24	61	J.F Shea	\$0.00								
80	Collector Tunnels (TBM)	360 days	Mon 10/17/22	Fri 3/1/24	61	J.F Shea	\$0.00								
81	Tailrace Surge Loops (TBM)	360 days	Mon 10/17/22	Fri 3/1/24	61	J.F Shea	\$0.00								
82	Machine Hall Construction	90 days	Mon 1/30/23	Fri 6/2/23	27	Bechtel	\$0.00								
83	Substation Yard Construction	90 days	Mon 1/30/23	Fri 6/2/23	27	Bechtel	\$0.00								
84	Electrical and Mechanical Installations	120 days	Mon 1/30/23	Fri 7/14/23	27	Bechtel	\$0.00								
85	Pump Turbine One Installation	15 days	Mon 1/30/23	Fri 2/17/23	27	Bechtel	\$0.00								
86	Pump Turbine Two Installation	15 days	Mon 2/20/23	Fri 3/10/23	27,85	Bechtel	\$0.00								
87	Pump Turbine Three Installation	15 days	Mon 3/13/23	Fri 3/31/23	27,86	Bechtel	\$0.00								
88	Pump Turbine Four Installation	15 days	Mon 4/3/23	Fri 4/21/23	27,87	Bechtel	\$0.00								
89	Pump Turbine Five Installation (Option)	15 days	Mon 4/24/23	Fri 5/12/23	27,88		\$0.00								
90	Pump Turbine Six Installation (Option)	15 days	Mon 5/15/23	Fri 6/2/23	27,89		\$0.00								
91	Pump Turbine Seven Installation (Option)	15 days	Mon 6/5/23	Fri 6/23/23	27,90		\$0.00								
92	Pump Turbine Eight Installation (Option)	15 days	Mon 4/24/23	Fri 5/12/23	27,88		\$0.00								
93	Main Inlet Valves	15 days	Mon 5/15/23	Fri 6/2/23	27,92		\$0.00								
94	BOP Equipment Installation	30 days	Mon 6/5/23	Fri 7/14/23	27,93		\$0.00								
95	Testing and Commissioning	60 days	Mon 7/17/23	Fri 10/6/23	94		\$0.00								
96	COD	1 day	Mon 10/9/23	Mon 10/9/23	95		\$0.00								

