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NPC and SPPC

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Application of NEVADA POWER COMPANY d/b/a NV Energy and SIERRA PACIFIC POWER COMPANY d/b/a NV Energy seeking approval of the Fourth Amendment to the 2018 Joint Integrated Resource Plan, including a request for approval of two new renewable energy power purchase agreements, a utility owned renewable facility and updates to the Transmission Plan, including new projects needed to increase import capacity, increase reliability, access renewable energy zones and allow the new renewable facilities to interconnect into the system.

Docket No. 20-07 ____

VOLUME 8 OF 9

TECHNICAL APPENDIX

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ECON-1

SPPC
LOADS AND RESOURCES TABLE
No New Import - So PV

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Gross Peak	1,940	1,829	1,898	1,975	2,011	1,976	2,013	2,049	2,074	2,099	2,125	2,150	2,176	2,205	2,231	2,257	2,286	2,313	2,342	2,370	2,400	2,427	2,455	2,482	2,511	2,537	2,566	2,594	2,619	2,648
DSM	31	44	59	71	83	95	105	120	132	144	155	164	176	191	203	213	225	234	247	262	273	284	296	306	321	333	345	357	366	378
Private Generation	3	5	6	7	9	10	11	13	14	15	16	17	18	20	21	22	23	24	25	26	28	29	30	31	32	33	34	35	37	38
Avoided Capacity	26	29	34	36	39	41	42	43	46	47	48	48	50	49	49	51	51	52	52	53	54	54	53	53	53	54	55	55	52	53
Forecast System Peak	1,880	1,751	1,799	1,861	1,880	1,830	1,855	1,873	1,882	1,893	1,906	1,921	1,932	1,945	1,958	1,971	1,987	2,003	2,018	2,029	2,045	2,060	2,076	2,092	2,105	2,117	2,132	2,147	2,164	2,179
Sales Obligations	1,880	1,751	1,799	1,861	1,880	1,830	1,855	1,873	1,882	1,893	1,906	1,921	1,932	1,945	1,958	1,971	1,987	2,003	2,018	2,029	2,045	2,060	2,076	2,092	2,105	2,117	2,132	2,147	2,164	2,179
NET System Peak	282	263	270	279	282	275	278	281	282	284	286	288	290	292	294	296	298	300	303	304	307	309	311	314	316	318	320	322	325	327
Planning Reserves (15%)	2,162	2,014	2,069	2,140	2,162	2,105	2,133	2,154	2,164	2,177	2,192	2,209	2,222	2,237	2,252	2,267	2,285	2,303	2,321	2,333	2,352	2,369	2,387	2,406	2,421	2,435	2,452	2,469	2,489	2,506
REQUIRED RESOURCES	1,795	1,624	1,695	1,991	1,991	2,006	1,995	1,975	1,880	1,939	2,291	2,175	2,175	2,142	2,142	2,081	2,024	2,080	2,062	2,092	2,033	2,169	2,172	2,052	2,087	2,089	2,222	2,238	2,133	2,270
AVAILABLE RESOURCES	367	390	374	149	171	99	138	179	284	238	34	47	95	110	186	261	223	259	241	319	200	215	354	334	346	290	231	356	236	
OPEN Position																														

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Transmission	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634
Availability for Sierra Import	96	96	179	239	239	239	239	223	223	221	210	210	210	200	196	182	182	182	159	132	123	121	121	121	121	98	95	92	45	-
Resources needing Transmission	367	390	374	149	171	99	138	179	284	238	34	47	95	110	186	261	223	259	241	319	200	215	354	334	346	290	231	356	236	
Filling Sierra's Open Position	171	148	81	246	224	296	257	232	127	175	424	390	377	339	328	266	191	249	216	261	192	313	298	159	202	193	312	358	278	398
Available Trans after native load																														

Company	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	
existing	261	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	
NVE-existing.Coal	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	1,111	
NVE-existing.Gas	186	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
PPA-existing.Conventional	24	97	149	202	202	202	202	202	202	200	171	171	171	166	161	151	89	87	85	74	70	68	68	68	67	67	62	31	-	-	
PPA-existing.Renewable.BESS	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	
PPA-existing.Renewable.CSP	57	47	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	
PPA-existing.Renewable.GEO	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
PPA-existing.Renewable.HYDRO	131	198	229	220	220	208	208	208	208	208	194	194	194	194	182	178	164	164	148	146	105	102	102	102	80	72	30	14	-	-	
PPA-existing.Renewable.PV	1,795	1,624	1,695	1,739	1,739	1,585	1,574	1,554	1,207	1,205	1,162	1,046	1,046	1,029	888	864	802	779	772	729	716	711	711	170	147	139	92	45	-	-	
existing Total																															
placeholder																															
NVE.placeholder.Gas																															
5-CT NN 84 MW_44																															
3-CT NN 84 MW_29																															
2-CT NN 84 MW_35																															
2-CT NN 84 MW_26																															
NVE.placeholder.Gas Total																															
PPA.placeholder.renewable.BESS																															
1-BESS- 200 MW_24				195	195	195	195	195	195	194	188	188	188	183	176	166	167	162	159	138	131	127	127	127	124	124	117	115	-	-	
1-BESS- 200 MW_42																															
1-BESS- 200 MW_40																															
SPPC Grid Tied Storage										49	375	375	375	366	352	331	335	404	398	346	326	317	317	318	373	372	525	577	636	746	
PPA.placeholder.renewable.BESS Total										195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	195	
PPA.placeholder.renewable.PV																															
PV3N_38																															
PV4N_48																															
PV1N_40																															
PV1N_42																															
PV1N_43																															

NV Energy
LOADS AND RESOURCES TABLE
No New Import - So PV

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050									
Gross Peak	7,968	8,044	8,229	8,400	8,590	8,675	8,835	8,992	9,138	9,287	9,421	9,562	9,698	9,832	9,969	10,108	1,026	1,035	1,043	1,051	1,057	1,064	1,072	1,080	1,088	1,094	1,101	1,108	1,117	1,124	1,133	1,140	1,148	1,158	1,169	1,178	1,183	1,193	
DSM	106	158	211	263	309	356	406	462	515	569	615	666	720	777	832	878	928	979	1,036	1,095	1,149	1,198	1,249	1,303	1,363	1,420	1,478	1,532	1,586	1,644									
Private Generation	94	128	136	183	212	240	267	293	319	341	361	380	402	423	443	462	484	504	525	543	566	587	607	625	648	668	688	706	730	750									
Avoided Capacity	162	171	179	184	182	181	204	212	222	230	238	249	249	249	254	255	255	258	261	261	246	245	243	243	239	231	222	224	224	223	226								
Forecast System Peak	7,606	7,587	7,683	7,810	7,887	7,898	7,958	8,025	8,082	8,155	8,215	8,278	8,327	8,383	8,440	8,507	8,565	8,616	8,668	8,725	8,799	8,853	8,920	8,980	9,040	9,119	9,207	9,277	9,320	9,393									
Sales Obligations																																							
NET System Peak	7,606	7,587	7,683	7,810	7,887	7,898	7,958	8,025	8,082	8,155	8,215	8,278	8,327	8,383	8,440	8,507	8,565	8,616	8,668	8,725	8,799	8,853	8,920	8,980	9,040	9,119	9,207	9,277	9,320	9,393									
Planning Reserves (13%)	969	963	976	993	1,003	1,003	1,011	1,019	1,026	1,035	1,043	1,051	1,057	1,064	1,072	1,080	1,088	1,094	1,101	1,108	1,117	1,124	1,133	1,140	1,148	1,158	1,169	1,178	1,183	1,193									
REQUIRED RESOURCES	8,575	8,550	8,659	8,803	8,890	8,901	8,969	9,044	9,108	9,190	9,258	9,329	9,384	9,447	9,512	9,587	9,652	9,710	9,769	9,833	9,916	9,977	10,044	10,114	10,184	10,254	10,324	10,394	10,464	10,534	10,604	10,674	10,744	10,814	10,884	10,954	11,024	11,094	
AVAILABLE RESOURCES	6,928	6,800	6,733	7,998	7,999	8,020	8,008	7,948	7,853	7,800	8,041	8,155	8,103	8,047	8,111	8,494	8,313	8,394	8,809	8,268	8,525	8,441	8,442	8,506	8,566	8,577	8,542	8,581	8,579	8,570									
OPEN Position	1,647	1,750	1,926	805	891	881	961	1,096	1,255	1,390	1,217	1,174	1,281	1,400	1,401	1,093	1,339	1,316	960	1,565	1,391	1,536	1,611	1,614	1,622	1,700	1,834	1,874	1,924	2,016									

[All]

Company	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050								
Transmission																																						
Availability for Sierra Import	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634	634
Resources needing transmission	96	96	179	239	239	239	239	223	223	221	210	210	210	200	196	182	182	182	159	132	123	121	121	121	121	98	95	92	45	-	-	-	-	-	-	-	-	
Filling Sierra's Open Position	367	390	374	149	171	99	138	179	284	238	34	47	95	110	186	261	223	259	241	319	200	215	354	334	346	230	231	356	236									
Available Trans after native load	171	148	81	246	224	297	257	232	127	175	424	390	377	339	328	266	191	249	216	261	192	313	298	159	202	193	312	358	278	398								
Availability for NPC Import	4,391	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	4,316	
Resources needing transmission	342	352	349	342	343	344	343	337	337	286	286	276	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198
Filling NPC's Open Position	1,280	1,360	1,552	656	720	782	822	917	971	1,152	1,316	1,140	1,234	1,306	1,291	907	1,078	1,093	701	1,324	1,072	1,336	1,395	1,261	1,288	1,354	1,604	1,643	1,569	1,780								
Available Trans after native load	2,769	2,604	2,415	3,318	3,253	3,190	3,151	3,062	3,008	2,878	2,714	2,900	2,884	2,812	2,827	3,211	3,040	3,025	3,417	2,794	2,794	2,794	2,723	2,857	2,830	2,764	2,514	2,475	2,549	2,338								
Company																																						
Row Labels	261	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134	
existing	5,475	5,475	5,475	5,475	5,475	5,475	5,475	5,475	5,475	5,093	5,039	4,725	4,725	4,510	4,163	4,163	4,019	4,019	3,401	2,127	2,127	1,025	1,025	484	484	484	484	484	484	484	484	484	484	484	484	484	484	
NVE-existing.Coal																																						
NVE-existing.Gas																																						
NVE-existing.Renewable.PV																																						
NVE-existing.Renewable.WH																																						
PPA-existing.Conventional	638	384	211	204	205	206	205	210	210	210	210	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198
PPA-existing.Renewable.BESS	24	97	171	649	648	648	648	648	648	645	601	601	601	585	564	530	472	457	450	391	369	359	359	351	351	351	328	282	205									
PPA-existing.Renewable.CSP	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	
PPA-existing.Renewable.GEO	184	174	162	162	162	154	143	132	121	70	70	60	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
PPA-existing.Renewable.HYDRO	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
PPA-existing.Renewable.LFG	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
PPA-existing.Renewable.PV	250	440	484	604	604	597	597	597	597	589	549	549	549	519	501	464	448	410	403	313	289	280	279	279	251	234	135	114	79									
PPA-existing.Renewable.WIND	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	
existing Total	6,928	6,800	6,733	7,324	7,325	7,176	7,164	7,104	6,757	6,647	6,509	6,173	6,089	5,828	5,441	5,370	5,152	5,094	4,459	3,0																		

NPC
LOADS AND RESOURCES TABLE
Greenlink North - So PV

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
Gross Peak	6,028	6,215	6,331	6,465	6,579	6,699	6,822	6,943	7,064	7,188	7,296	7,412	7,522	7,627	7,738	7,845	7,946	8,044	8,148	8,254	8,360	8,456	8,564	8,669	8,779	8,901	9,029	9,145	9,240	9,365
DSM	75	114	152	192	226	261	301	342	383	425	460	502	544	586	629	665	703	745	789	833	876	914	953	997	1,042	1,087	1,133	1,175	1,220	1,266
Private Generation	91	123	150	176	203	230	256	280	305	326	345	363	384	403	422	440	461	480	500	517	538	558	577	594	616	635	654	671	693	712
Avoided Capacity	136	142	145	148	143	140	162	176	176	175	182	190	199	200	205	204	204	206	209	208	192	191	190	190	190	186	177	167	169	171
Forecast System Peak	5,726	5,836	5,884	5,949	6,007	6,068	6,103	6,152	6,200	6,262	6,309	6,357	6,395	6,438	6,482	6,536	6,578	6,613	6,650	6,696	6,754	6,793	6,844	6,888	6,935	7,002	7,075	7,130	7,156	7,214
Sales Obligations																														
NET System Peak	5,726	5,836	5,884	5,949	6,007	6,068	6,103	6,152	6,200	6,262	6,309	6,357	6,395	6,438	6,482	6,536	6,578	6,613	6,650	6,696	6,754	6,793	6,844	6,888	6,935	7,002	7,075	7,130	7,156	7,214
Planning Reserves (12%)	687	700	706	714	721	728	732	738	744	751	757	763	773	778	784	789	794	798	804	810	815	821	827	832	840	849	856	859	866	
REQUIRED RESOURCES	6,413	6,536	6,590	6,663	6,728	6,796	6,835	6,890	6,944	7,013	7,066	7,120	7,162	7,211	7,260	7,310	7,367	7,407	7,448	7,500	7,564	7,608	7,665	7,715	7,767	7,842	7,924	7,986	8,015	8,080
AVAILABLE RESOURCES	5,133	5,176	5,038	6,007	6,008	6,014	6,013	5,973	5,973	5,861	5,750	5,980	5,928	5,905	5,969	6,413	6,289	6,314	6,747	6,238	6,557	6,334	6,335	6,454	6,479	6,488	6,320	6,343	6,393	6,300
OPEN Position	1,280	1,360	1,552	656	720	782	822	917	971	1,152	1,316	1,140	1,234	1,306	1,291	907	1,078	1,093	701	1,262	1,007	1,274	1,330	1,261	1,288	1,354	1,604	1,643	1,622	1,780
Available Trans after native load	2,769	2,604	2,415	3,318	3,253	3,190	3,151	3,062	3,008	2,878	2,714	2,900	2,884	2,812	2,827	3,211	3,040	3,025	3,417	2,856	3,111	2,844	2,788	2,857	2,830	2,764	2,514	2,475	2,496	2,338

Company	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	
NPC																															
Row Labels	4,364	4,364	4,364	4,364	4,364	4,364	4,364	4,364	4,364	4,316	4,262	4,052	3,837	3,622	3,622	3,622	3,478	3,478	2,860	1,586	1,586	484	484	484	484	484	-	-	-	-	
existing	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
NVE-existing.Gas	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
NVE-existing.Renewable.PV																															
NVE-existing.Renewable.WH																															
PPA-existing.Conventional	452	372	199	192	193	194	193	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198	198
PPA-existing.Renewable.BESS			22	447	447	446	446	446	446	445	430	430	419	403	379	383	370	365	323	305	296	296	296	291	284	284	266	251	206		
PPA-existing.Renewable.CSP	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	
PPA-existing.Renewable.GEO	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	
PPA-existing.Renewable.LFG	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
PPA-existing.Renewable.PV	119	242	255	384	384	389	389	389	389	381	355	355	355	337	323	300	284	262	257	203	187	184	184	177	171	162	105	100	80		
PPA-existing.Renewable.WIND	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	
existing Total	5,133	5,176	5,038	5,585	5,591	5,590	5,550	5,550	5,550	5,442	5,347	5,127	5,043	4,799	4,553	4,506	4,350	4,315	3,687	2,317	2,276	1,162	1,162	1,150	1,137	1,128	569	484	198		
placeholder																															
NVE.placeholder.Gas																															
1-2x1 CC SN 900 MW_42																															
11-CT SN 90 MW_39																															
3-CT SN 90 MW_47																															
2-CT SN 90 MW_44																															
5-CT SN 90 MW_32																															
NVE.placeholder.Gas Total																															
PPA.placeholder.renewable.BESS																															
3-BESS -200 MW_41																															
6-BESS -200 MW_40																															
1-BESS -200 MW_34																															
NPC Grid Tied Storage																															
PPA.placeholder.renewable.BESS Total																															
PPA.placeholder.renewable.GO																															
PPA.placeholder.renewable.GO Total																															

