



Memorandum

From: Denis Lawrence

Date: 24 August 2020

To: AER Opex team

Subject: Revised Files for 2019 DNSP Economic Benchmarking Report

The AER has requested the provision of revised results for Economic Insights' 2019 economic benchmarking of DNSPs. The revisions include the following:

- updated weights for non–reliability outputs
- revised opex data for JEN for the years 2016 to 2018 to remove incorrect allocation of parent company costs to the electricity DNSP business
- corrections to the opex data for CIT and PCR for the year 2016 to remove a service classification adjustment related to metering in the application of their CAM applying in 2014, and
- adding opex for metering back to AND's network services opex for the years 2016 to 2018.

The non–reliability output weights are updated to correct a coding error in the formation of the time trend variables included in the regressions from which the four non–reliability output weights are derived. The time trends should have a common base or starting point for each DNSP and, by implication, for each of the 52 separate regressions. The effect of correcting the time trend error on the output cost weights is shown in table 1. Weight is transferred from customer numbers to circuit length.

Table 1: **DNSP Leontief cost function output cost weights**

<i>Output</i>	<i>Uncorrected 2006-2017</i>	<i>Corrected 2006-2018</i>
Energy throughput	12.46%	8.58%
Ratcheted maximum demand	28.26%	33.76%
Customer numbers	30.29%	18.52%
Circuit length	28.99%	39.14%

Revised key panel data economic benchmarking results and supporting files are contained in the accompanying zip file *Economic Insights AER Revised 2019 DNSP ABR Files 24Aug2020.zip*.

Revised MTFP, opex MPFP and capital MPFP results are presented in the following tables 2, 3 and 4, respectively. Revised opex cost function efficiency scores are presented in table 5 for the period 2006 to 2018 and in table 6 for the period 2012 to 2018.

Table 2 Revised DNSP multilateral total factor productivity indexes, 2006–2018

<i>Year</i>	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
ACT	1.000	0.988	0.999	0.986	0.948	0.870	0.909	0.883	0.822	0.853	1.055	1.010	0.979
AGD	0.924	0.976	0.841	0.852	0.856	0.860	0.819	0.886	0.832	0.780	0.805	0.842	0.899
AND	1.259	1.203	1.251	1.119	1.194	1.162	1.154	1.091	1.042	1.019	0.914	1.033	1.002
CIT	1.496	1.482	1.525	1.424	1.367	1.442	1.312	1.323	1.292	1.326	1.321	1.349	1.409
END	1.302	1.240	1.120	1.175	1.206	1.196	1.141	1.145	1.108	1.079	1.055	1.128	1.153
ENX	1.236	1.261	1.214	1.221	1.228	1.182	1.165	1.121	1.145	1.107	1.170	1.185	1.180
ERG	1.246	1.460	1.381	1.338	1.353	1.290	1.308	1.448	1.452	1.316	1.287	1.383	1.341
ESS	1.447	1.393	1.302	1.254	1.254	1.211	1.071	1.099	1.230	1.164	1.237	1.199	1.208
JEN	1.081	1.089	1.220	1.173	1.129	1.132	1.078	1.073	1.069	1.069	1.042	1.037	1.064
PCR	1.450	1.501	1.515	1.406	1.390	1.446	1.376	1.308	1.296	1.316	1.368	1.363	1.313
SAP	1.843	1.796	1.894	1.841	1.725	1.625	1.645	1.578	1.513	1.549	1.617	1.516	1.553
TND	1.274	1.220	1.204	1.085	1.011	1.101	1.041	1.127	1.068	1.178	1.127	1.044	1.033
UED	1.262	1.276	1.281	1.312	1.286	1.173	1.112	1.166	1.137	1.180	1.153	1.202	1.292

Table 3 Revised DNSP multilateral opex partial productivity indexes, 2006–2018

<i>Year</i>	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
ACT	1.000	0.993	0.976	0.955	0.863	0.749	0.759	0.705	0.627	0.674	1.247	1.097	0.963
AGD	0.768	0.913	0.639	0.701	0.652	0.684	0.629	0.804	0.714	0.614	0.684	0.773	0.919
AND	1.513	1.291	1.320	1.100	1.231	1.200	1.170	1.049	0.999	0.973	0.851	1.036	1.068
CIT	1.849	1.677	1.823	1.506	1.394	1.563	1.221	1.276	1.238	1.313	1.319	1.400	1.615
END	1.198	1.125	0.923	1.040	1.115	1.084	1.043	1.154	1.057	1.029	0.975	1.112	1.235
ENX	1.206	1.166	1.126	1.137	1.162	1.075	1.031	0.961	1.045	1.012	1.162	1.183	1.179
ERG	0.918	1.178	1.084	1.094	1.147	0.968	0.981	1.259	1.294	1.091	1.075	1.250	1.197
ESS	1.408	1.268	1.075	1.111	1.110	1.096	0.881	0.984	1.131	1.126	1.421	1.389	1.355
JEN	0.909	0.895	1.157	1.072	0.935	0.966	0.863	0.885	0.899	0.902	0.860	0.832	0.920
PCR	1.693	1.930	1.997	1.756	1.891	1.876	1.582	1.473	1.585	1.548	1.841	1.780	1.678
SAP	2.015	2.119	2.082	1.942	1.859	1.527	1.543	1.439	1.370	1.376	1.618	1.389	1.452
TND	1.509	1.462	1.457	1.264	1.080	1.235	1.106	1.405	1.303	1.629	1.509	1.167	1.255
UED	1.105	1.178	1.204	1.229	1.196	0.970	0.937	1.061	1.028	1.109	0.987	1.089	1.361

Table 4 Revised DNSP multilateral opex partial productivity indexes, 2006–2018

<i>Year</i>	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
ACT	1.000	0.979	1.015	1.001	1.004	0.953	1.017	1.018	0.993	0.994	0.988	0.980	0.993
AGD	1.034	1.011	1.002	0.960	1.013	0.990	0.963	0.954	0.917	0.903	0.894	0.899	0.907
AND	1.112	1.125	1.203	1.108	1.172	1.144	1.136	1.111	1.063	1.037	0.949	1.030	0.965
CIT	1.435	1.452	1.494	1.432	1.423	1.454	1.399	1.391	1.362	1.377	1.373	1.392	1.392
END	1.369	1.314	1.265	1.266	1.267	1.269	1.206	1.148	1.139	1.109	1.105	1.139	1.105
ENX	1.256	1.322	1.268	1.278	1.273	1.253	1.256	1.231	1.209	1.172	1.179	1.192	1.183
ERG	1.494	1.651	1.594	1.499	1.486	1.522	1.534	1.569	1.551	1.466	1.427	1.466	1.430
ESS	1.453	1.456	1.453	1.336	1.341	1.278	1.201	1.166	1.287	1.174	1.146	1.112	1.122
JEN	1.217	1.253	1.261	1.245	1.272	1.256	1.259	1.216	1.195	1.193	1.176	1.198	1.170
PCR	1.266	1.240	1.279	1.177	1.169	1.225	1.227	1.183	1.121	1.159	1.142	1.161	1.117
SAP	1.772	1.674	1.806	1.807	1.672	1.687	1.710	1.667	1.606	1.661	1.623	1.597	1.617
TND	1.158	1.115	1.088	0.987	0.973	1.041	1.005	1.023	0.956	1.005	0.982	0.973	0.906
UED	1.366	1.336	1.330	1.360	1.343	1.324	1.239	1.232	1.207	1.223	1.263	1.275	1.259

Table 5 Revised DNSP average opex cost efficiency scores, 2006–2018

<i>DNSP</i>	<i>SFACD</i>	<i>SFATLG</i>	<i>LSETLG</i>	<i>LSECD</i>	<i>Opex MPFP</i>	<i>Average</i>
ACT	0.453	0.449	0.409	0.444	0.513	0.454
AGD	0.432	0.517	0.442	0.432	0.420	0.448
CIT	0.872	0.940	0.839	0.876	0.851	0.876
END	0.565	0.602	0.590	0.563	0.623	0.589
ENX	0.603	0.678	0.614	0.605	0.638	0.628
ERG	0.541	0.591	0.574	0.551	0.642	0.580
ESS	0.609	0.642	0.713	0.661	0.679	0.661
JEN	0.648	0.675	0.519	0.633	0.534	0.602
PCR	0.968	0.965	1.000	1.000	1.000	0.986
SAP	0.792	0.832	0.830	0.798	0.960	0.842
AND	0.724	0.708	0.700	0.759	0.654	0.709
TND	0.742	0.709	0.713	0.746	0.768	0.735
UED	0.795	0.869	0.667	0.802	0.639	0.754

Table 6 Revised DNSP average opex cost efficiency scores, 2012–2018

<i>DNSP</i>	<i>SFACD</i>	<i>SFATLG</i>	<i>LSETLG</i>	<i>LSECD</i>	<i>Opex MPFP</i>	<i>Average</i>
ACT	0.466	0.471	0.413	0.421	0.523	0.459
AGD	0.445	0.464	0.438	0.430	0.447	0.446*
CIT	0.795	0.919	0.799	0.774	0.814	0.820
END	0.591	0.608	0.617	0.567	0.661	0.609
ENX	0.608	0.603	0.593	0.582	0.658	0.609
ERG	0.582	0.657	0.677	0.582	0.711	0.642
ESS	0.644	0.748	0.755	0.654	0.723	0.705
JEN	0.614	0.588	0.493	0.595	0.535	0.583*
PCR	0.959	0.942	1.000	1.000	1.000	0.980
SAP	0.765	0.785	0.797	0.737	0.888	0.794
AND	0.687	0.632	0.620	0.701	0.625	0.653
TND	0.769	0.758	0.755	0.741	0.818	0.768
UED	0.770	0.736	0.645	0.783	0.659	0.737*

* Average excludes LSETLG as monotonicity requirement violated for this DNSP using this model.