



QH10377

AURORA MATERIAL COST ESCALATION FACTORS

COST ESCALATION DRIVERS AND ASSET CATEGORIES

DECEMBER 2011 UPDATE

QH10377-0000-OSR-CA-E2-0001_1

CURRENT REVISION APPROVALS		
	NAME	POSITION
ORIGINATOR	J W Reddel	Project Engineer
REVIEWED	J W Reddel	Project Engineer
APPROVED (PM)	J Butler	Project Manager

REVISION STATUS AND APPROVAL HISTORY					
Rev	Date	Status	ORIG	REV	PM
1	10/01/12	CHANGE CUMULATIVE TO YEAR ON YEAR ESCALATORS	JWR	JWR	JB
0	20/12/11	FINAL MATERIALS COST ESCALATORS AND ASSET CATEGORIES	JWR	JWR	JB

REAL Year on Year Cost Escalation Rates - Updated 19/12/2011

Base Year

DRIVER	Jun-10	Jun-11	Jun-12	Jun-13	Jun-14	Jun-15	Jun-16	Jun-17
Aluminium	-9.94%	2.03%	-12.39%	2.12%	4.48%	3.91%	3.71%	3.17%
Copper	14.25%	11.89%	-12.59%	-1.76%	-0.11%	-1.57%	-1.99%	-2.50%
Steel Ave	-29.23%	6.14%	2.64%	4.33%	1.04%	0.88%	1.33%	0.88%
Oil	-8.77%	2.36%	1.94%	1.88%	-2.76%	-1.62%	0.72%	4.46%
Construction Costs	-8.53%	0.59%	-0.17%	-1.18%	-1.54%	-0.61%	-0.19%	0.35%
CPI	3.05%	3.60%	2.00%	3.25%	2.50%	2.50%	2.50%	2.50%

March 2011 figures

DRIVER	Jun-10	Jun-11	Jun-12	Jun-13	Jun-14	Jun-15	Jun-16	Jun-17
Aluminium	-9.82%	25.04%	17.02%	-1.07%	-1.12%	-2.98%	-2.69%	-2.08%
Copper	14.40%	42.16%	17.79%	-6.04%	-7.69%	-10.45%	-10.76%	-10.86%
Steel Ave	-29.14%	27.38%	13.30%	-2.53%	-1.40%	-3.05%	-2.76%	-2.15%
Oil	-8.63%	26.03%	8.73%	-4.76%	8.71%	-3.33%	-8.88%	1.09%
Construction Costs	-8.53%	2.00%	-0.26%	-2.95%	-1.60%	1.05%	2.79%	2.91%
CPI	3.05%	2.50%	2.75%	3.00%	2.50%	2.50%	2.50%	2.50%

November 2010 figures

DRIVER	Jun-10	Jun-11	Jun-12	Jun-13	Jun-14	Jun-15	Jun-16	Jun-17
Aluminium	-9.80%	21.70%	12.90%	-1.10%	-0.60%	-2.20%	-1.90%	-1.30%
Copper	14.40%	27.80%	9.30%	-6.90%	-7.50%	-9.30%	-9.40%	-9.30%
Steel Ave	-29.10%	18.70%	13.10%	-1.30%	-3.80%	-3.70%	-3.50%	-2.80%
Oil	-8.60%	19.50%	13.10%	-4.00%	-3.70%	-1.80%	0.80%	-0.90%
Construction Costs	-8.50%	2.00%	-0.30%	-2.90%	-1.60%	1.00%	2.80%	2.90%
CPI	3.10%	2.80%	2.80%	3.00%	2.50%	2.50%	2.50%	2.50%

REAL Year on Year Cost Escalation Rates - Updated 19/12/2011

ASSET CATEGORIES	Jun-10	Jun-11	Jun-12	Jun-13	Jun-14	Jun-15	Jun-16	Jun-17
Overhead Subtransmission Lines	0.868	1.024	0.986	1.013	1.005	1.007	1.010	1.010
Underground Subtransmission Cables	0.985	1.034	0.950	1.005	1.008	1.005	1.005	1.006
Overhead Distribution Lines	0.889	1.024	0.990	1.018	1.007	1.007	1.011	1.013
Underground Distribution Cables	0.947	1.010	0.977	1.007	1.004	1.006	1.009	1.014
Distribution Equipment	0.950	1.019	0.993	1.009	1.001	1.001	1.004	1.006
Substation Bays	0.949	1.013	0.996	1.002	0.996	0.999	1.002	1.005
Substation Establishment	0.915	1.006	0.998	0.988	0.985	0.994	0.998	1.003
Distribution Substation Switchgear	0.950	1.019	0.993	1.009	1.001	1.001	1.004	1.006
Transformers (Zone + Distribution)	0.922	1.032	0.984	1.013	1.004	1.003	1.006	1.007
Distribution Substations	0.921	1.028	0.985	1.010	1.002	1.002	1.005	1.007
Low Voltage Services	0.921	1.016	0.941	1.015	1.023	1.020	1.020	1.017
Metering	0.987	1.008	0.999	1.003	0.998	0.998	1.001	1.004
Communications - Pilot Wires	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Generation Assets	0.925	1.024	1.002	1.012	1.000	1.000	1.003	1.005
Street Lighting	0.971	1.006	1.003	1.004	1.000	1.000	1.001	1.002
Other Equipment	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Centre - SCADA	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Communications	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
IT Systems	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Office Equipment & Furniture	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Motor Vehicles	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Plant & Equipment	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Buildings	0.915	1.006	0.998	0.988	0.985	0.994	0.998	1.003
Wood Poles	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Steel Poles	0.855	1.031	1.015	1.022	1.001	1.002	1.007	1.011
Concrete Poles	0.915	1.006	0.998	0.988	0.985	0.994	0.998	1.003
Switchgear	0.950	1.019	0.993	1.009	1.001	1.001	1.004	1.006
Transformers	0.922	1.032	0.984	1.013	1.004	1.003	1.006	1.007
Structure	0.915	1.006	0.998	0.988	0.985	0.994	0.998	1.003
Foundation	0.915	1.006	0.998	0.988	0.985	0.994	0.998	1.003
Civil	0.915	1.006	0.998	0.988	0.985	0.994	0.998	1.003
P&C	0.987	1.008	0.999	1.003	0.998	0.998	1.001	1.004
Erection + Commissioning - Subs	1.017	1.001	1.028	1.023	1.007	1.005	0.999	1.005
Design, Procure, OH	1.000	1.002	1.020	1.018	1.008	1.010	1.005	1.009
Conductor	0.921	1.016	0.941	1.015	1.023	1.020	1.020	1.017
Towers	0.811	1.034	1.012	1.016	0.997	1.001	1.006	1.006
Insulators	0.978	1.006	1.005	1.005	0.993	0.996	1.002	1.011
Fittings	0.924	1.017	0.996	1.013	0.999	1.001	1.007	1.016
Foundations	0.915	1.006	0.998	0.988	0.985	0.994	0.998	1.003
Erection + Commissioning - OH	1.017	1.001	1.028	1.023	1.007	1.005	0.999	1.005
Wood Poles	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Steel Poles	0.855	1.031	1.015	1.022	1.001	1.002	1.007	1.011
Cable Al	0.942	1.013	0.960	1.011	1.013	1.012	1.014	1.016
Cable Cu	1.059	1.070	0.933	0.993	0.999	0.991	0.990	0.989
Erection + Commissioning - UG	0.966	1.003	1.013	1.006	0.996	0.999	0.999	1.004
PVC Conduit	0.974	1.007	1.006	1.006	0.992	0.995	1.002	1.013
Pit	0.915	1.006	0.998	0.988	0.985	0.994	0.998	1.003
Cable Protection	0.915	1.006	0.998	0.988	0.985	0.994	0.998	1.003
Re-instatement	0.915	1.006	0.998	0.988	0.985	0.994	0.998	1.003
Misc Material	0.905	1.021	1.011	1.016	0.996	0.998	1.005	1.013
Standby Generators	0.925	1.024	1.002	1.012	1.000	1.000	1.003	1.005

March 2011 figures

ASSET CATEGORIES	Jun-10	Jun-11	Jun-12	Jun-13	Jun-14	Jun-15	Jun-16	Jun-17
Overhead Subtransmission Lines	0.864	1.123	1.070	0.980	0.992	0.987	0.992	0.999
Underground Subtransmission Cables	0.980	1.158	1.089	0.977	0.984	0.965	0.962	0.974
Overhead Distribution Lines	0.885	1.130	1.074	0.985	1.004	0.982	0.977	0.992
Underground Distribution Cables	0.949	1.086	1.051	0.987	1.008	0.988	0.983	0.999
Distribution Equipment	0.946	1.084	1.046	0.987	1.001	0.984	0.980	0.991
Substation Bays	0.946	1.059	1.029	0.984	0.998	0.991	0.992	1.001
Substation Establishment	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
Distribution Substation Switchgear	0.946	1.084	1.046	0.987	1.001	0.984	0.980	0.991
Transformers (Zone + Distribution)	0.913	1.143	1.077	0.980	0.994	0.974	0.970	0.983
Distribution Substations	0.914	1.127	1.068	0.979	0.993	0.978	0.977	0.989
Low Voltage Services	0.922	1.134	1.095	0.992	0.993	0.982	0.984	0.988
Metering	0.986	1.038	1.018	0.992	1.005	0.992	0.987	0.997
Communications - Pilot Wires	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Generation Assets	0.919	1.098	1.051	0.985	1.000	0.983	0.978	0.990
Street Lighting	0.938	1.044	1.026	0.995	0.997	0.994	0.994	0.996
Other Equipment	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Centre - SCADA	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Communications	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
IT Systems	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Office Equipment & Furniture	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Motor Vehicles	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Plant & Equipment	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Buildings	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
Wood Poles	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Steel Poles	0.850	1.144	1.072	0.981	1.006	0.981	0.974	0.992
Concrete Poles	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
Switchgear	0.946	1.084	1.046	0.987	1.001	0.984	0.980	0.991
Transformers	0.913	1.143	1.077	0.980	0.994	0.974	0.970	0.983
Structure	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
Foundation	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
Civil	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
P&C	0.986	1.038	1.018	0.992	1.005	0.992	0.987	0.997
Erection + Commissioning - Subs	1.024	1.007	1.013	1.007	1.014	1.018	1.014	1.014
Design, Procure, OH	1.008	1.006	1.014	1.008	1.016	1.018	1.013	1.012
Conductor	0.922	1.134	1.095	0.992	0.993	0.982	0.984	0.988
Towers	0.808	1.136	1.067	0.973	0.985	0.988	0.998	1.003
Insulators	0.981	1.052	1.021	0.988	1.022	0.991	0.977	1.003
Fittings	0.923	1.113	1.057	0.983	1.018	0.984	0.970	0.997
Foundations	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
Erection + Commissioning - OH	1.024	1.007	1.013	1.007	1.014	1.018	1.014	1.014
Wood Poles	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Steel Poles	0.850	1.144	1.072	0.981	1.006	0.981	0.974	0.992
Cable Al	0.945	1.108	1.072	0.990	1.004	0.984	0.980	0.993
Cable Cu	1.045	1.241	1.115	0.959	0.956	0.935	0.933	0.940
Erection + Commissioning - UG	0.970	1.013	1.006	0.990	1.000	1.015	1.020	1.021
PVC Conduit	0.977	1.064	1.025	0.985	1.026	0.990	0.973	1.003
Pit	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
Cable Protection	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
Re-instatement	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
Misc Material	0.902	1.115	1.054	0.981	1.017	0.984	0.970	0.997
Standby Generators	0.919	1.098	1.051	0.985	1.000	0.983	0.978	0.990

November 2010 figures

ASSET CATEGORIES	Jun-10	Jun-11	Jun-12	Jun-13	Jun-14	Jun-15	Jun-16	Jun-17
Overhead Subtransmission Lines	0.864	1.093	1.062	0.984	0.981	0.987	0.995	0.998
Underground Subtransmission Cables	0.980	1.116	1.062	0.979	0.976	0.973	0.978	0.978
Overhead Distribution Lines	0.885	1.097	1.070	0.990	0.982	0.983	0.991	0.989
Underground Distribution Cables	0.949	1.070	1.047	0.989	0.988	0.992	1.002	0.998
Distribution Equipment	0.946	1.061	1.041	0.990	0.985	0.987	0.993	0.991
Substation Bays	0.946	1.044	1.026	0.986	0.986	0.994	1.002	1.001
Substation Establishment	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
Distribution Substation Switchgear	0.946	1.061	1.041	0.990	0.985	0.987	0.993	0.991
Transformers (Zone + Distribution)	0.913	1.102	1.065	0.984	0.977	0.977	0.984	0.983
Distribution Substations	0.914	1.091	1.056	0.983	0.978	0.981	0.989	0.989
Low Voltage Services	0.922	1.111	1.074	0.993	0.993	0.986	0.987	0.991
Metering	0.986	1.027	1.018	0.994	0.991	0.994	0.999	0.996
Communications - Pilot Wires	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Generation Assets	0.919	1.068	1.047	0.989	0.981	0.984	0.990	0.988
Street Lighting	0.938	1.030	1.024	0.997	0.992	0.993	0.993	0.995
Other Equipment	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control Centre - SCADA	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Communications	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
IT Systems	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Office Equipment & Furniture	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Motor Vehicles	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Plant & Equipment	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Buildings	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
Wood Poles	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Steel Poles	0.850	1.101	1.075	0.988	0.975	0.980	0.989	0.986
Concrete Poles	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
Switchgear	0.946	1.061	1.041	0.990	0.985	0.987	0.993	0.991
Transformers	0.913	1.102	1.065	0.984	0.977	0.977	0.984	0.983
Structure	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
Foundation	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
Civil	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
P&C	0.986	1.027	1.018	0.994	0.991	0.994	0.999	0.996
Erection + Commissioning - Subs	1.024	1.007	1.013	1.007	1.014	1.018	1.014	1.014
Design, Procure, OH	1.008	1.006	1.014	1.008	1.016	1.018	1.013	1.012
Conductor	0.922	1.111	1.074	0.993	0.993	0.986	0.987	0.991
Towers	0.808	1.096	1.064	0.978	0.973	0.985	0.996	1.001
Insulators	0.981	1.039	1.028	0.992	0.986	0.995	1.007	0.998
Fittings	0.923	1.085	1.060	0.988	0.980	0.987	1.000	0.993
Foundations	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
Erection + Commissioning - OH	1.024	1.007	1.013	1.007	1.014	1.018	1.014	1.014
Wood Poles	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Steel Poles	0.850	1.101	1.075	0.988	0.975	0.980	0.989	0.986
Cable Al	0.945	1.089	1.061	0.992	0.991	0.989	0.995	0.993
Cable Cu	1.045	1.160	1.064	0.957	0.953	0.946	0.950	0.951
Erection + Commissioning - UG	0.970	1.013	1.006	0.990	1.000	1.015	1.020	1.021
PVC Conduit	0.977	1.048	1.034	0.990	0.984	0.994	1.009	0.997
Pit	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
Cable Protection	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
Re-instatement	0.915	1.020	0.997	0.971	0.984	1.010	1.028	1.029
Misc Material	0.902	1.082	1.060	0.988	0.977	0.985	0.999	0.991
Standby Generators	0.919	1.068	1.047	0.989	0.981	0.984	0.990	0.988