

**APPENDIX D**

**SCENARIO C4 AND D1 TABLES**



**APPENDIX D1**

**SCENARIO C4 TABLES**



Table SC1: Water demand projection of Lephalale Municipality in million m³/a															
User	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	2038	2040	2045	2050
Lephalale Municipality	6.81	7.74	8.81	10.35	10.91	11.29	11.96	12.47	13.02	14.08	13.97	13.95	14.02	14.20	14.39

Table SC2: Water demand projection for power generation in the Lephalale Area in million m³/a															
User	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	2038	2040	2045	2050
Matimba Power Station	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	0.00	0.00	0.00	0.00	0.00	0.00
Matimba Power Station with FGD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.20	11.20	11.20	11.20	11.20	11.20
Medupi Power Station	4.19	5.84	6.00	6.00	6.00	6.80	8.30	10.40	15.40	15.40	15.40	15.40	15.40	15.40	15.40
Next Coal Fire Power Station (CF3)	0.00	0.00	0.00	0.00	0.00	0.20	0.20	0.20	0.37	15.50	15.50	15.50	15.50	15.50	15.50
Longer term Coal Fire Power Station (CF4)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.37	10.85	15.50	15.50	15.50
Eskom	7.79	9.44	9.60	9.60	9.60	10.60	12.10	14.20	19.37	42.30	42.47	52.95	57.60	57.60	57.60
IPP Exxaro Initiative	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.77	1.42	1.95	1.95	1.95	1.95	1.95	1.95
IPP AAC Initiative	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.33	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Total IPP's	0.00	0.00	0.00	0.00	0.00	0.00	0.47	1.10	1.92	2.45	2.45	2.45	2.45	2.45	2.45
<b>Total</b>	<b>7.79</b>	<b>9.44</b>	<b>9.60</b>	<b>9.60</b>	<b>9.60</b>	<b>10.60</b>	<b>12.57</b>	<b>15.30</b>	<b>21.29</b>	<b>44.75</b>	<b>44.92</b>	<b>55.40</b>	<b>60.05</b>	<b>60.05</b>	<b>60.05</b>

Table SC3: Water demand projection for coal production to support power generation in the Lephalale Area in million m³/a															
User	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	2038	2040	2045	2050
Exxaro	2.67	3.28	3.61	3.61	3.61	3.81	3.81	6.00	6.38	6.54	6.54	6.54	6.54	6.54	6.54
Other mines for CF3	0.00	0.00	0.00	0.00	0.20	0.20	2.06	2.06	5.54	5.54	5.54	5.54	5.54	5.54	5.54
Other mines for CF4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	4.44	6.37	6.37	6.37
<b>Total</b>	<b>2.67</b>	<b>3.28</b>	<b>3.61</b>	<b>3.61</b>	<b>3.81</b>	<b>4.01</b>	<b>5.87</b>	<b>8.06</b>	<b>11.92</b>	<b>12.08</b>	<b>12.28</b>	<b>16.52</b>	<b>18.45</b>	<b>18.45</b>	<b>18.45</b>

Table SC4: Water demand projection for coal production to support power generation in the Mpumalanga province of the RSA in million m³/a															
User	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	2038	2040	2045	2050
Exxaro	0.21	0.21	0.23	0.23	0.23	0.23	0.23	1.40	2.23	2.23	2.23	2.23	2.23	2.23	2.23
Other mines	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.72	9.78	10.08	12.32	11.67	11.92	17.32	17.32
<b>Total</b>	<b>0.21</b>	<b>0.21</b>	<b>0.23</b>	<b>0.23</b>	<b>0.23</b>	<b>0.23</b>	<b>0.23</b>	<b>7.12</b>	<b>12.01</b>	<b>12.31</b>	<b>14.55</b>	<b>13.90</b>	<b>14.15</b>	<b>19.55</b>	<b>19.55</b>

**Table SC5: Water demand projection for coal production for export purposes in million m<sup>3</sup>/a**

User	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	2038	2040	2045	2050
Exxaro	0.00	0.21	0.23	0.29	0.35	0.35	0.35	0.57	1.20	1.26	1.26	1.26	1.26	1.26	1.26
Other mines	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.58	7.46	7.17	8.13	7.48	7.73	13.13	13.13
<b>Total</b>	<b>0.00</b>	<b>0.21</b>	<b>0.23</b>	<b>0.29</b>	<b>0.35</b>	<b>0.35</b>	<b>0.35</b>	<b>2.15</b>	<b>8.66</b>	<b>8.43</b>	<b>9.39</b>	<b>8.74</b>	<b>8.99</b>	<b>14.39</b>	<b>14.39</b>

**Table SC6: Water demand projection for coal production for other industrial purposes in million m<sup>3</sup>/a**

User	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	2038	2040	2045	2050
Exxaro	0.00	0.41	0.45	0.58	0.71	0.71	1.31	1.42	4.10	4.17	4.17	4.17	4.17	4.17	4.17
Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94	2.59	2.66	2.66	2.66	2.66	2.66	2.66
<b>Total</b>	<b>0.00</b>	<b>0.41</b>	<b>0.45</b>	<b>0.58</b>	<b>0.71</b>	<b>0.71</b>	<b>1.31</b>	<b>2.36</b>	<b>6.69</b>	<b>6.83</b>	<b>6.83</b>	<b>6.83</b>	<b>6.83</b>	<b>6.83</b>	<b>6.83</b>

**Table SC7: Water demand projection for incidental users along the MCWAP-1 and MCWAP-2A in million m<sup>3</sup>/a**

User	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	2038	2040	2045	2050
MCWAP-1	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
MCWAP-2	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
<b>Total</b>	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>0.40</b>	<b>0.40</b>	<b>0.40</b>	<b>0.40</b>	<b>0.40</b>	<b>0.40</b>	<b>0.40</b>	<b>0.40</b>	<b>0.40</b>

**Table SC8: Integrated water demand projection for the MCWAP in million m<sup>3</sup>/a**

User	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	2038	2040	2045	2050
Lephalale Municipality	6.81	7.74	8.81	10.35	10.91	11.29	11.96	12.47	13.02	14.08	13.97	13.95	14.02	14.20	14.39
Power generation in the Lephalale area	7.79	9.44	9.60	9.60	9.60	10.60	12.57	15.30	21.29	44.75	44.92	55.40	60.05	60.05	60.05
Support power generation in the Lephalale area	2.67	3.28	3.61	3.61	3.81	4.01	5.87	8.06	11.92	12.08	12.28	16.52	18.45	18.45	18.45
Power generation in Mpumalanga	0.21	0.21	0.23	0.23	0.23	0.23	0.23	7.12	12.01	12.31	14.55	13.90	14.15	19.55	19.55
Production for export	0.00	0.21	0.23	0.29	0.35	0.35	0.35	2.15	8.66	8.43	9.39	8.74	8.99	14.39	14.39
Other industrial purposes	0.00	0.41	0.45	0.58	0.71	0.71	1.31	2.36	6.69	6.83	6.83	6.83	6.83	6.83	6.83
Incidental users	0.10	0.10	0.10	0.10	0.10	0.10	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
<b>Total</b>	<b>17.58</b>	<b>21.39</b>	<b>23.03</b>	<b>24.76</b>	<b>25.71</b>	<b>27.29</b>	<b>32.69</b>	<b>47.86</b>	<b>73.99</b>	<b>98.88</b>	<b>102.34</b>	<b>115.74</b>	<b>122.89</b>	<b>133.87</b>	<b>134.06</b>

# **APPENDIX D2**

## **SCENARIO D1 TABLES**





Table SC1: Water demand projection of Lephalale Municipality in million m <sup>3</sup> /a														
User	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	2040	2045	2050
Lephalale Municipality	6.81	6.81	6.81	6.81	6.81	7.74	8.81	10.35	12.81	12.86	14.15	13.88	14.05	14.24

Table SC2: Water demand projection for power generation in the Lephalale Area in million m <sup>3</sup> /a														
User	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	2040	2045	2050
Matimba Power Station	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60
Matimba Power Station FGD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.60	7.60	7.60	7.60	7.60
Medupi Power Station	1.30	1.30	1.30	2.60	3.90	5.20	6.50	7.80	15.40	15.40	15.40	15.40	15.40	15.40
Next Coal Fire Power Station (CF3)	0.00	0.00	0.00	0.00	0.00	0.20	0.20	0.20	0.37	15.50	15.50	15.50	15.50	15.50
Longer term Coal Fire Power Station (CF4)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.37	15.50	15.50	15.50
Eskom	4.90	4.90	4.90	6.20	7.50	9.00	10.30	11.60	19.37	42.30	42.47	57.60	57.60	57.60
IPP Exxaro Initiative	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.12	0.77	1.42	1.95	1.95	1.95	1.95
IPP AAC Initiative	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.50	0.50	0.50	0.50	0.50
Total IPP's	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.12	1.27	1.92	2.45	2.45	2.45	2.45
<b>Total</b>	<b>4.90</b>	<b>4.90</b>	<b>4.90</b>	<b>6.20</b>	<b>7.50</b>	<b>9.00</b>	<b>10.36</b>	<b>11.72</b>	<b>20.64</b>	<b>44.22</b>	<b>44.92</b>	<b>60.05</b>	<b>60.05</b>	<b>60.05</b>

Table SC3: Water demand projection for coal production to support power generation in the Lephalale Area in million m <sup>3</sup> /a														
User	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	2040	2045	2050
Exxaro	2.67	3.28	3.68	4.84	5.75	5.75	6.16	6.38	6.81	6.54	6.54	6.54	6.54	6.54
Other mines for CF3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.06	6.00	6.00	6.00	6.00	6.00
Other mines for CF4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	6.00	6.00	6.00
<b>Total</b>	<b>2.67</b>	<b>3.28</b>	<b>3.68</b>	<b>4.84</b>	<b>5.75</b>	<b>5.75</b>	<b>6.16</b>	<b>6.38</b>	<b>8.87</b>	<b>12.54</b>	<b>12.74</b>	<b>18.54</b>	<b>18.54</b>	<b>18.54</b>

Table SC4: Water demand projection for coal production to support power generation in the Mpumalanga province of the RSA in million m <sup>3</sup> /a														
User	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	2040	2045	2050
Exxaro	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	2.07	2.23	2.23	2.23	2.23
Other mines	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.34	8.05	10.25	10.20	16.00	16.00
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>9.17</b>	<b>10.12</b>	<b>12.48</b>	<b>12.43</b>	<b>18.23</b>	<b>18.23</b>

User	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	2040	2045	2050
Exxaro	0.00	0.00	0.00	0.00	0.00	0.21	0.23	0.29	1.02	1.21	1.26	1.26	1.26	1.26
Other mines	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.18	7.46	7.22	7.43	7.28	13.13
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.21</b>	<b>0.23</b>	<b>0.29</b>	<b>8.20</b>	<b>8.67</b>	<b>8.48</b>	<b>8.69</b>	<b>8.54</b>	<b>14.39</b>

User	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	2040	2045	2050
Exxaro	0.00	0.41	0.45	0.58	0.71	0.71	1.15	1.18	4.11	4.17	4.17	4.17	4.17	4.17
Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.67	2.61	2.66	2.66	2.66	2.66
<b>Total</b>	<b>0.00</b>	<b>0.41</b>	<b>0.45</b>	<b>0.58</b>	<b>0.71</b>	<b>0.71</b>	<b>1.15</b>	<b>1.18</b>	<b>5.78</b>	<b>6.78</b>	<b>6.83</b>	<b>6.83</b>	<b>6.83</b>	<b>6.83</b>

User	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	2040	2045	2050
MCWAP-1	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
MCWAP-2	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
<b>Total</b>	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>0.40</b>	<b>0.40</b>	<b>0.40</b>	<b>0.40</b>	<b>0.40</b>	<b>0.40</b>	<b>0.40</b>	<b>0.40</b>

User	2013	2014	2015	2016	2017	2018	2019	2020	2025	2030	2035	2040	2045	2050
Lephalale Municipality	6.81	6.81	6.81	6.81	6.81	7.74	8.81	10.35	12.81	12.86	14.15	13.88	14.05	14.24
Power generation in the Lephalale area	4.90	4.90	4.90	6.20	7.50	9.00	10.36	11.72	20.64	44.22	44.92	60.05	60.05	60.05
Support power generation in the Lephalale area	2.67	3.28	3.68	4.84	5.75	5.75	6.16	6.38	8.87	12.54	12.74	18.54	18.54	18.54
Power generation in Mpumalanga	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.17	10.12	12.48	12.43	18.23	18.23
Production for export	0.00	0.00	0.00	0.00	0.00	0.21	0.23	0.29	8.20	8.67	8.48	8.69	8.54	14.39
Other industrial purposes	0.00	0.41	0.45	0.58	0.71	0.71	1.15	1.18	5.78	6.78	6.83	6.83	6.83	6.83
Incidental users	0.10	0.10	0.10	0.10	0.10	0.10	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
<b>Total</b>	<b>14.48</b>	<b>15.50</b>	<b>15.94</b>	<b>18.53</b>	<b>20.87</b>	<b>23.51</b>	<b>27.11</b>	<b>30.32</b>	<b>65.87</b>	<b>95.59</b>	<b>100.00</b>	<b>120.82</b>	<b>126.64</b>	<b>132.68</b>