

# Sunlight Synchronisation: Exploring the Influence of Daylight Saving Time on CO2 Emissions in Australia's Electricity Grid

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## Data Appendix

These are the results tables from our stata files. Information about the data source is in the README.md file.

## 2. Base DiD Regressions

	(1)	(2)	(3)	(4)
	KG CO2 Emissions per Capita per 30 Minutes	kwh Electricity Consumption per Capita per 30 Minutes	KG CO2 Emissions per Capita per 30 Minutes	kwh Electricity Consumption per Capita per 30 Minutes
DST Region (Treatment)	-0.133* (0.0391)	-0.180** (0.0284)	-0.144** (0.0281)	-0.215*** (0.0198)
DST Now in Any Region (Time)	0.0243*** (1.50e-14)	0.0317*** (5.98e-15)	0.0263 (0.0174)	0.0315 (0.0174)
DST Region (Treatment) × DST Now in Any Region (Time)	-0.0330** (0.00963)	-0.0568** (0.00920)	-0.0181 (0.0222)	-0.0235 (0.0161)
Weekend (Local)			-0.0338*** (0.00132)	-0.0462*** (0.00181)
1 if Public holiday in Region, 0 otherwise			-0.0276** (0.00556)	-0.0498*** (0.00387)
Mean Daily Temperature °C in given State			-0.0109 (0.0142)	-0.0250 (0.0168)
Mean Daily Temperature °C in given State × Mean Daily Temperature °C in given State			0.000272 (0.000235)	0.000521 (0.000289)
Solar Exposure Coefficient			-0.00422 (0.00631)	-0.00815 (0.00600)
Daily mean Wind Speed (km/h) Cubed			-0.0594 (0.0249)	0.00417 (0.0119)
Constant	0.576*** (1.41e-14)	0.656*** (6.96e-15)	0.736* (0.215)	1.008* (0.285)
r2	0.152	0.326	0.213	0.378
r2adj	0.152	0.326	0.213	0.378

Standard errors in parentheses  
\* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

## 4. DDD Design and Event Study

	(1)	(2)
	KG CO2 Emissions per Capita per 30 Minutes	kwh Electricity Consumption per Capita per 30 Minutes
DST Region (Treatment)	-0.133* (0.0298)	-0.212*** (0.0211)
DST Now in Any Region (Time)	0.0522* (0.0174)	0.0674* (0.0174)
DST Region (Treatment) × DST Now in Any Region (Time)	-0.0261 (0.0185)	-0.0341 (0.0194)
Not Midday time period as a 0 or 1	0.0268*** (4.55e-13)	0.0200*** (1.31e-13)
DST Region (Treatment) × Not Midday time period as a 0 or 1	-0.0131 (0.00807)	-0.00367 (0.00533)
DST Now in Any Region (Time) × Not Midday time period as a 0 or 1	-0.0297*** (1.03e-12)	-0.0411*** (5.43e-13)
DST Region (Treatment) × DST Now in Any Region (Time) × Not Midday time period as a 0 or 1	0.00912 (0.0124)	0.0121 (0.0104)
Weekend (Local)	-0.0338*** (0.00132)	-0.0462*** (0.00181)
1 if Public holiday in Region, 0 otherwise	-0.0378** (0.00556)	-0.0498*** (0.00387)
Mean Daily Temperature °C in given State	-0.0109 (0.0142)	-0.0250 (0.0168)
Mean Daily Temperature °C in given State × Mean Daily Temperature °C in given State	0.000272 (0.000235)	0.000521 (0.000289)
Solar Exposure Coefficient	-0.00422 (0.00631)	-0.00815 (0.00600)
Daily mean Wind Speed (km/h) Cubed	-0.0594 (0.0249)	0.00417 (0.0119)
Constant	0.713* (0.215)	0.990* (0.265)
r2	0.214	0.379
r2adj	0.214	0.379

Standard errors in parentheses  
\* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

## 8. Tables with ln(CO2) and ln Electricity Consumption

	(1) ln_CO2	(2) ln_Elec
DST Region (Treatment)	-0.345* (0.120)	-0.402*** (0.0444)
DST Now in Any Region (Time)	0.116 (0.0509)	0.0921* (0.0280)
DST Region (Treatment) × DST Now in Any Region (Time)	-0.0425 (0.0509)	-0.0506 (0.0332)
Not Midday time period as a 0 or 1	0.0535*** (2.12e-12)	0.0304*** (1.98e-13)
DST Region (Treatment) × Not Midday time period as a 0 or 1	-0.00589 (0.0244)	0.00296 (0.0102)
DST Now in Any Region (Time) × Not Midday time period as a 0 or 1	-0.0526*** (4.35e-12)	-0.0598*** (8.28e-13)
DST Region (Treatment) × DST Now in Any Region (Time) × Not Midday time period as a 0 or 1	0.0116 (0.0288)	0.00886 (0.0233)
Weekend (Local)	-0.0774** (0.0124)	-0.0947*** (0.0109)
1 if Public holiday in Region, 0 otherwise	-0.0900* (0.0226)	-0.110** (0.0155)
Mean Daily Temperature °C in given State	-0.0178 (0.0352)	-0.0402 (0.0225)
Mean Daily Temperature °C in given State × Mean Daily Temperature °C in given State	0.000501 (0.000578)	0.000872 (0.000380)
Solar Exposure Coefficient	-0.0171 (0.0204)	-0.0148 (0.00913)
Daily mean Wind Speed (km/h) Cubed	-0.205 (0.102)	0.00503 (0.0206)
Constant	-0.273 (0.525)	0.105 (0.366)
r <sup>2</sup>	0.171	0.400
r <sup>2</sup> <sub>a</sub>	0.171	0.400

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$