The tables in this supplementary material paper are data all used in the empirical analysis of the proposed improved ABC algorithm application, but not included in the formal paper "An Improved Artificial Colony Algorithm Model for Forecasting Chinese Electricity Consumption and Analyzing Effect Mechanism". Especially, the running results based on the improved ABC algorithm are attached to the excel form named "running results".

Table 1. Basic data

Year	RGDP(Billion RMB)	FAI(100Million RMB)	FDI(10 Thousand Dollars)	POP(10 Thousand)	Urbanization level(%)	Household consumption level(RMB)	Real GDP of secondary industry(Billion RMB)	Carbon emission（Million Ton）	Electricity consumption (100Millionkw.h)
1990	1877.43	4517	1028900	114333	26.41%	831	743.46228	2457.765121	6230.4
1991	2049.76	5109.13242	1155000	115823	26.94%	854.268	1252.40336	2590.969234	6804
1992	2342.87	7007.892454	1920200	117171	27.46%	927.735048	1480.69384	2722.926247	7589.2
1993	2668.53	10325.67141	3895500	118517	27.99%	1051.123809	1718.53332	2876.538225	8426.5
1994	3017.6	15436.68478	4320600	119850	28.51%	1139.418209	2000.6688	3029.011891	9260.37
1995	3349.53	18903.96601	4813300	121121	29.04%	1191.831447	2103.50484	3228.356161	10023.4
1996	3681.13	22032.21154	5480400	122389	30.48%	1290.753457	2289.66286	3322.882025	10764.29
1997	4019.8	24524.18879	6440800	123626	31.91%	1412.084282	2371.682	3313.757854	11284.4
1998	4334.68	28463.12625	5855700	124761	33.35%	1475.628075	2587.80396	3312.470944	11598.43
1999	4664.98	29974.59839	5265900	125786	34.78%	1562.690131	2649.70864	3422.665765	12305.23

2000	5058.3	32559.57468	5936000	126743	36.22%	1692.393412	3009.6885	3513.687823	13471.38
2001	5478.15	37065.22908	4967000	127627	37.66%	1871.787114	2530.9053	3673.540716	14633.46
2002	5975.68	43413.08383	5501000	128453	39.09%	1985.966128	2940.03456	4024.633705	16465.45
2003	6574.77	54370.45988	5614000	129227	40.53%	2152.787282	3806.79183	4722.877766	19031.6
2004	7237.83	66739.96212	6407200	129988	41.76%	2277.648945	3741.95811	5521.14595	21971.37
2005	8056.44	87375.61024	6380500	130756	42.99%	2441.639669	4052.38932	6326.064225	24940.39
2006	9077.71	108372.6108	6708000	131448	44.34%	2678.478717	4493.46645	6925.899506	28587.97
2007	10363.33	132169.3359	7834000	132129	45.89%	2903.470929	5171.30167	7517.956726	32711.79
2008	11361.81	158703.7649	9525300	132802	46.99%	3275.115208	5499.11604	7662.85413	34380
2009	12407.09	230121.6906	9180400	133450	48.34%	3546.94977	6439.27971	8036.935367	36430
2010	13722.24	242938.0019	10882000	134091	49.95%	3894.550847	7849.12128	8471.926924	41923
2011	15025.86	292199.9343	11769800	134735	51.27%	4268.427729	7738.3179	9206.120993	46928
2012	16189.99	370617.9426	11329400	135404	52.57%	4737.954779	7981.66507	9415.422465	49762.64
2013	17434.25	444959.2124	11872100	136072	53.73%	5169.108664	8368.44	9674.220559	53223
2014	18706.95	510209.6517	11970500	136782	54.77%	5546.453596	8810.97345	9761.077863	55233

Table 2. Regression analysis between electricity consumption and real GDP

Regression statistics	
Multiple R	0.996564
R Square	0.993139
Adjusted R Square	0.992841
Standard error	1353.061
Number of observations	25

Table 3. Analysis of variance between electricity consumption and real GDP of secondary industry

Analysis of variance					
	df	SS	MS	F	Significance F
Regression analysis	1	6095330935	6095330935	3329.372	2.17E-26
residual	23	42107829.04	1830775.175		
Total value	24	6137438764			

Table 4. Regression analysis between electricity consumption and FAI

Regression statistics	
Multiple R	0.960324
R Square	0.922222
Adjusted R Square	0.91884
Standard error	4555.742

Number of observations	25

Table 5. Analysis of variance between electricity consumption and FAI

Analysis of variance					
	df	SS	MS	F	Significance F
Regression analysis	1	5660078747	5660078747	272.712	3E-14
residual	23	477360017.8	20754783.38		
Total value	24	6137438764			

Table 6. Regression analysis between electricity consumption and FDI

Regression statistics	
Multiple R	0.940741
R Square	0.884993
Adjusted R Square	0.879993
Standard error	5539.773
Number of observations	25

Table 7. Analysis of variance between electricity consumption and FDI

Analysis of variance					
	df	SS	MS	F	Significance F
Regression analysis	1	5431589697	5431589697	176.9876434	2.75E-12
residual	23	705849067.4	30689089.89		
Total value	24	6137438764			

Table 8. Regression analysis between electricity consumption and POP

Regression statistics	
Multiple R	0.897789
R Square	0.806026
Adjusted R Square	0.797592
Standard error	7194.517
Number of observations	25

Table 9. Analysis of variance between electricity consumption and POP

	df	SS	MS	F	Significance F
Regression analysis	1	4946934021	4946934021	95.572473	1.17E-09
residual	23	1190504744	51761075.81		
Total value	24	6137438764			

Table 10. Regression analysis between electricity consumption and urbanization level

Regression statistics	
Multiple R	0.964297
R Square	0.929869
Adjusted R Square	0.926820
Standard error	4325.974
Number of observations	25

Table 11. Analysis of variance between electricity consumption and urbanization level

Analysis of variance					
	df	SS	MS	F	Significance F
Regression analysis	1	5707015494	5707015494	304.9587819	9.0948E-15
residual	23	430423270.7	18714055.25		
Total value	24	6137438764			

Table 12. Regression analysis between electricity consumption and household consumption level

Regression statistics	
Multiple R	0.994267
R Square	0.988567
Adjusted R Square	0.98807
Standard error	1746.659
Number of observations	25

Table 13. Analysis of variance between electricity consumption and household consumption level

Analysis of variance					
	df	SS	MS	F	Significance F
Regression analysis	1	6067269922	6067269922	1988.734648	7.72E-24
residual	23	70168842.45	3050819.237		
Total value	24	6137438764			

Table 14. Regression analysis between electricity consumption and real GDP of secondary industry

Regression statistics	
Multiple R	0.990537
R Square	0.981163
Adjusted R Square	0.980344
Standard error	2242.015
Number of observations	25

Table 15. Analysis of variance between electricity consumption and real GDP of secondary industry

Analysis of variance	df	SS	MS	F	Significance F
Regression analysis	1	6021826237	6021826237	1197.984388	2.41E-21
residual	23	115612527.9	5026631.648		
Total value	24	6137438764			

Table 16. Regression analysis between electricity consumption and carbon emission

Regression statistics	
Multiple R	0.989751
R Square	0.979607
Adjusted R Square	0.978720
Standard error	2332.755
Number of observations	25

Table 17. Analysis of variance between electricity consumption and carbon emission

	df	SS	MS	F	Significance F
		Analysis of variance			
Regression analysis	1	6012278569.56403	6012278569.56403	1104.84334	6.02E-21
residual	23	125160194.83755	5441747.60163		
Total value	24	6137438764.40158			