No.	Title	Promulgator Document Number		Promulgation Date	Relevant Sections	
1	Opinions of the CPC Central Committee and the State Council on Accelerating the Ecological Civilization Construction	The Communist Party of China (CPC) Central Committee and the State Council		2015-04-25		
2	Integrated Reform Plan for Promoting Ecological Progress	The Communist Party of China (CPC) Central Committee and the State Council		2015-09-21		
3	General Office of the State Council on the Issuing Notice on Construction of Ecological Environmental	General Office of the State Council of the People's Republic of China	(2015) No.56, Document of General Office of the State Council	2015-08-12		
4	Monitoring Network Chinese State Council. Advice on applying the strictest water resources management system	the State Council of the People's Republic of China	(2012) No.3, Document of State Council	2012-01-12		
5	Decision of Speeding Up Water Conservancy Reform and Development	The Communist Party of China (CPC) Central Committee and the State Council	(2011) No.1, Document of the Central Committee of the Communist Party of China (CPC)	2010-12-31		
6	Action Plan for Prevention and Control of Water Pollution	the State Council of the People's Republic of China	(2015) No.17, Document of State Council	2015-04-16		
7	the 13th Five-Year Plan for National Eco- Environmental Conservation	the State Council of the People's Republic of China	(2016) No. 65, Document of State Council	2016-12-05		
8	Water Law of the People's Republic of China (2016Amendment)	Standing Committee of The National People's Congress	Order of the Chairman of the People's Republic of China (No.48)	2016-07-02	Article 4 Article 21 Article 22 Article 26 Article 30	
9	Law of the People's	Standing		2008-02-28	Article 16	

#### Table S1 E-flows documents in China

	Republic of China on Prevention and Control of Water Pollution The Ordinance on	Committee of The National People's Congress			
10	Administrative of Water Drawing Permission and Collection of Water Resource Fees	the State Council of the People's Republic of China	Order No.460 of the State Council	2017-03-01	Article 11
11	Regulations on Water Regulation of the Yellow River	the State Council of the People's Republic of China National	Order No.472 of the State Council	2006-07-05	Article 3 Article 8
12	the 13th Five-Year Plan for Water conservancy reform and development	Development and Reform Commission, Ministry of Water Resources, Ministry of Housing and Urban-Rural		2016-12-23	
13	Interim measures for Reviewing River Hydropower Plan Report and Plan Environmental Impact Assessment Report	development National Development and Reform Commission, Ministry of Environmental Protection	(2011) No.2242, Document of National Development and Reform Commission/Energy	2011-10-18	Article 3 Article 8
14	Ecological Indicator System and Application Guidance for Water Project Planning and Design	Ministry of Water Resources	(2011) No.248, Document of Water Resources and Hydropower Planning and Design General Institute	2010-03-24	Two indicators: Ecological basic flow and ecological water demand for sensitive
15	Guiding Opinions on River Ecological Restoration of Rural Hydropower Efficiency Improvements and	Ministry of Water Resources	(2016) No.60, Document of Ministry of Water Resources/Bureau of Hydropower	2016-02-22	targets

16	Capacity Additions The Measure on Administrative of Water Drawing Permission The Measures on	Ministry of Water Resources	Order No.34 of Ministry of Water Resources	2008-4-09	Article 8
17	Operation of Three Gorges Reservoir and the Management of the Water Resources and Rivers in the Reservoir	Ministry of Water Resources	Order No.35 of Ministry of Water Resources	2008-11-03	Article 13
18	The Measures on Water Resources Assessment of Construction Project	Ministry of Water Resources	Order No.15 of Ministry of Water Resources and National Development and Reform Commission	2002-3-24	Article 3
19	Notice on Enhancing Environmental Protection of Hydropower Construction	National Development and Reform Commission, Ministry of Environmental Protection	(2005) No.13, Document of State Environmental Protection Administration	2005-01-20	
20	Technical Guide for Environmental Impact Assessment of River Ecological Flow, Cold Water, and Fish Passage Facilities for Water Conservation Construction Projects (Trial)	State Environmental Protection Administration	(2006)No.4, Letter of Department of Environment Impact Assessment	2006-01-13	
21	Notice on Further Enhancing Environmental Protection of Hydropower Construction	Ministry of Environmental Protection	(2012) No.4, Document of General Office of Ministry of Environmental Protection	2012-01-10	
22	Notice on Deepening Implementation of Ecological Environmental Protection for	Ministry of Environmental Protection, National Energy Administration	(2014) No.65, Document of Ministry of Environmental Protection	2014-05-10	

	Hydropower				
	Development				
	Technical Review		(2014) No.81,		
	Essentials of River	Ministry of	Document of		
23	Hydropower Plan	Environmental	Appraisal Center for	2014-07-07	
	Environmental Impact	Protection	Environment and		
	Assessment Report		Engineering		
24	Technological Principle and Methods for Enactment of Local Water Pollutant Emission Standard	Ministry of Urban-Rural Development and Environmental Protection	GB 3839-83	1983-04-09	2.5
25	Code of Practice for Computation on Allowable Permitted Assimilative Capacity of Water Bodies	Administration of Quality Supervision, Inspection and Quarantine; Standardization Administration	GB/T 25173-2010	2010-09-26	
26	Specification for Calculation of Environmental Flow in Rivers and Lakes	Ministry of Water Resources	SL/Z 712-2014	2014-12-05	
27	Guidelines for Assessment of Rivers and Lakes Eco-Water Demands	Ministry of Water Resources	SL/Z 479-2010	2010-10-11	
28	Code for River Basin Planning	Ministry of Water Resources	SL 201-2015	2015-01-05	7.1.3 11.0.3 11.0.4 15.1
29	Regulation for Environmental Impact Assessment of River Basin Planning	Ministry of Water Resources	SL 45-2006	2006-10-23	6.3.4 Appendix C
30	Specification on Compiling Hydropower Development Planning of Medium and Small Rivers	Ministry of Water Resources	SL 221-2009	2009-12-21	8.0.6
31	Code of Practice for	Ministry of Water	SL 613-2013	2013-08-08	9.2

	Water Resources Protection Planning	Resources			
32	Guidelines for Aquatic Ecological Protection	Ministry of Water	SL 709-2015	2015-06-02	5.1 5.2
52	and Restoration Planning	Resources	517072013	2010/00/02	5.3 5.4
33	Water Resources Assessment of Construction Projects	Ministry of Water Resources	SL 322-2013	2013-12-05	6.2.4 9.2.2 9.2.5
34	Guidelines for Assessment of Water- Draw and Utilization in Construction Projects of Water Resources and Hydropower	Ministry of Water Resources	SL 525-2011	2011-02-17	5.2.2 5.3.1 6.2.3 7.1.3 7.1.5 7.2.4 7.4.1
35	Specification for Compiling Preliminary Design Report of Water Resources and Hydropower Projects	Ministry of Water Resources	SL 619-2013	2013-11-20	11.2.1 11.3.1
36	Regulation for Environment Protection Design of Water Resources and Hydropower Project	Ministry of Water Resources	SL 492-2011	2011-01-25	2.1
37	Environmental Impact Assessment Code Hydroelectric Station Project for Rural Area	Ministry of Water Resources	SL 315-2005	2005-05-20	5.2.3 6.2.1
38	Environmental Impact Assessment of Water	Ministry of Water Resources	SL/Z 705-2015	2015-03-16	
39	Standard for Evaluation of Green Small Hydropower Stations	Ministry of Water Resources	SL 752-2017	2017-05-05	4.2.2 5.1.2 Appendix B
40	Technical Specification for The Analysis of Supply and Demand Balance of Water Resources	Ministry of Water Resources	SL 429-2008	2008-07-22	3.3.2 4.4.1 5.7.1 5.7.2 5.7.3 5.8.1

					5.8.2
					7.1.6
41	Code of Practice for Computation on Permissible Pollution Bearing Capacity of Water Bodies	Ministry of Water Resources	SL 348-2006	2006-10-23	4.4.1 4.4.4
42	Code for Post Assessment of Environmental Impacts of River Hydropower Development	National Energy Administration	NB/T 35059-2015	2015-10-27	4.3.2 5.2.3 5.2.4 5.3.4
43	Specification on Compiling Hydropower Planning of River	National Energy Administration	DL/T 5042-2010	2010-08-27	10.1.2 10.4.1 10.5.3
44	Specification for Environmental Protection Design of Water Conservancy and Hydropower Project	National Development and Reform Commission	DL/T 5402-2007	2007-12-03	12
45	Code for Environmental Impact Assessment of Water Conservancy and Hydropower Project	State Environmental Protection Administration, Ministry of Water Resources	HJ/T 88-2003	2003-03-28	6.2.5
46	Comprehensive implementation of River Chiefs in Chongqing	Chongqing Municipal People's Government	(2017) No.11, Document of General Office of Chongqing Municipal People's Government (2016) No.5,	2017-03-16	Prevent ecological basic flow from decreasing.
47	Measures of Rural Hydropower in Zhejiang	Department of Water Resources of Zhejiang Province	Document of Bureau of Hydropower, Department of Water Resources of Zhejiang Province (2015) No.3,	2016-11-18	Article 7 Article 21
48	Notice on Minimum Flow Discharge of Hydroplants	Department of Water Resources of Henan Province	Document of Bureau of Hydropower, Department of Water Resources of Henan Province	2015-04-18	

	Regulation of Fujian	Standing			
40	Province of River Basin	Committee of		2012 02 01	Article 17
49	Water Environment	Fujian People's		2012-02-01	Article 47
	Protection	Congress			
	Mangunas of	People's	Order No.152 of the		
50	Guangdong Province	Government of	People's Government	2010-11-16	Article 20
50		Guangdong	of Guangdong		Article 34
	for Sinali Hydropower	Province	Province		
	Regulation of Gansu for	Standing	No E2 of Standing		
51	Shiyanghe River Basin	Committee of	No.52 of Standing	2007 07 27	A reticio O
51	Water Resources	Gansu People's	Deemle's Congress	2007-07-27	Article 9
	Management	Congress	reopie's Congress		

# Table S2 E-flows of Hydropower Projects

N 0.	Name	Time	Province	Installed Capacity (MW)	Basin	River	E-Flows (m³/s)
1	Xiaoxia	2001	Gansu	230	Yellow River	Yellow River	null
2	Jilintai I	2001	Xinjiang	460	Yili River	Kashi River	null
3	Suofengyin g	2002	Guizhou	600	Yangtze River	Wu River	null
4	Laxiwa	2002	Qinghai	4200	Yellow River	Yellow River	null
5	Xihe	2002	Shaanxi	180	Hanjiang River	Hanjiang River	80
6	Suzhi	2002	Qinghai	214.5	Yellow River	Yellow River	150
7	Pubugou	2003	Sichuan	3300	Yangtze River	Daduhe River	3
8	Liziping	2003	Sichuan	132	Daduhe River	Nanyahe River	1.5
9	Tankeng	2003	Zhejiang	600	Oujiang River	Oujiang river Tributary	4
10	Yele	2004	Sichuan	240	Daduhe River	Nanyahe River	1.5
11	Jinping I	2004	Sichuan	3600	Yalongjiang River	Yalongjia ng River	20
12	Shawan	2004	Sichuan	480	Daduhe River	Nanyahe River	15
13	Sigouxia	2004	Gansu	240	Yellow River	Yellow River	166
14	Yinping	2004	Sichuan	100	Yangtze River	Fujiang River	1.5
15	Guazhi	2004	Guizhou	150	Yangtze River	Qingshuiji ang River	83
16	Pengshui	2004	Chongqing	1750	Wujiang River	Wujiang River	280
17	Zhexi	2004	Hunan	500	Yangtze River	Zishui River	100
18	Jishixia	2004	Qinghai	1020	Yellow River	Yellow River	288.1
19	Shuhe	2004	Shaanxi	270	Hanjiang River	Hanjiang River	120

## (Approval by Ministry of Environmental Protection from 2001 to 2017)

20	Xiluodu	2004	Sichuan	12600	Jinshajiang	Jinshajian	1181
					River	g River	
							$3m^3/s$ in
					D · 1		low-flow
21	Baoxing	2004	Sichuan	195	Baoxinghe	Donghe	period,
					River	River	4m³/s in
							normal-
						Valongija	water period
22	Jinping II	2004	Sichuan	4800	Yangtze River	ng River	45
•		• • • • •			Lancangjiang	Lancangji	
23	Nuozhadu	2004	Yunnan	5850	River	ang River	500
	<b>.</b>	<b>2</b> 00 <b>-</b>		2 100	Jinshajiang	Jinshajian	2=0
24	Jinanqiao	2005	Yunnan	2400	River	g River	350
<u>-</u>	5.1.	<b>2</b> 00 <b>-</b>	$\sim$ 1	120		Qingshuiji	(
25	Baishi	2005	Guizhou	420	Yangtze River	ang River	75.4
24	Chahanwus	2005		200		Kaiduhe	10 5
26	u	2005	Xinjiang	309	Kaiduhe River	River	43.5
07	Classica in a	2005	Cui-hau	105 5	Zhujiang	Beipanjian	6
27	Shannipo	2005	Guizhou	185.5	River	g River	6
20	D' 1	2005	TT 1 ·	450	I · I · D·	Loushui	F 00
28	Pingne	2005	Hubei	450	Lishui River	River	5.33
20	Const	2005	C'alana a	2400	Variation Diagona	Yalongjia	200
29	Guandi	2005	Sichuan	2400	rangtze Kiver	ng River	200
20	Demland	2005	I I. hai	500	Hanjiang	Duhe	167
30	Fankou	2005	nubel	500	River	River	10.7
21	Cilin	2005	Cuizhou	105	Vanatao Diwar	Wujiang	105 50
51	SIIII	2005	Guiznou	105	rangize River	river	195.59
22	Longtouchi	2005	Sichuan	700	Minjiang	Daduhe	165 /
32	Longtousin	2003	Sichuan	700	River	River	105.4
22	Oizogong	2005	Cuangyi	456	Zhujiang	Hongshui	400
55	Qiaogolig	2003	Gualigxi	450	River	he River	400
24	Shonyigou	2005	Sichuan	660	Vanatza Piwar	Daduhe	377
34	Shehkigou	2003	Sichuan	000	Taligize River	River	327
25	Nancha	2005	Vunnon	150	Hongho Piwor	Honghe	20
33	INalisita	2003	1 ui ii lai i	150	i longne kiver	River	20
26	Muinvio	2005	Cancul	140	Vollow Piwor	Yellow	226
30	vvujitixia	2005	Gansu	140	Tellow Kivel	River	220
27	Viangijaha	2005	Sichuan	6000	Jinshajiang	Jinshajian	1200
57	Alangjiaba	2003	Sicilian	0000	River	g River	1200
28	Laohuzui	2004	Xizana	102	Nivona Pivor	Bahe	Q
50	Launuzui	2000	Aizalig	102	iniyang Kiver	River	2
20	Huangfong	2004	Oinghai	225	Vollow Piwor	Yellow	200
59	Tuangieng	2000	Quigilai	223	Tenow Kivel	River	200

40	Tuokou	2006	Hunan	800	Yangtze River	Yuanshui River	54
							2.41m <sup>3</sup> /s in
							Non-fish
							spawning
							period (July
							to next Feb.),
							2.41m <sup>3</sup> /s in
							fish
							spawning
41	T· 1·	2007	C: 1	220	V I D'	Jiulonghe	period (Mar.
41	Jiangbian	2006	Sichuan	330	Yalong River	River	to June),
							maintaining
							6 m <sup>3</sup> /s for 10
							days in
							March and
							April, and
							11m <sup>3</sup> /s for 10
							days in May
							and June.
42	Dayingjiang	2006	Yunnan	700	Yiluowadi Jiang	Dayingjia ng River	24.5
					0	0	228 m³/s in
							normal
							period,
							224.49 m <sup>3</sup> /s
						Wujiang	at every1:
43	Shatuo	2006	Guizhou	112	Wujiang River	River	00-8: 00 in
							low flow
							period and
							normal-
							water period
44	Dagangsha n	2006	Sichuan	2600	Dadu River	Dadu River	Null
45	Luding	2006	Sichuan	920	Yangtze River	Daduhe River	184
46	Madushan	2006	Yunnan	300	Honghe River	Honghe River	30.2
47	Changheba	2006	Sichuan	2600	Daduhe River	Daduhe River	166.5
48	Gongguoqi ao	2006	Yunnan	900	Lancangjiang River	Lancangji ang River	150
49	Yinpan	2006	Chongqing	600	Yangtze River	Wujiang River	345

50	Mao'orgai	2007	Sichuan	420	Minjiang	Heishuihe	5.2
50	Ma0 ergai	2007	Sicilian	420	River	River	5.2
51	Hekou	2007	Gansu	74	Yellow River	Longqing he River	300
52	Dongjing	2007	Guizhou	880	Zhujiang River	Beipanjian g River	89.2
53	Dahua	2007	Guangxi	110	Zhujiang River	Hongshui he River	1130
54	Xiaoxuan	2008	Hubei	50	Yangtze River	Duhe River	16.7
55	Linxihe	2008	Hubei	170	Yangtze River	Loushui River	8.65
56	Lizhou	2008	Sichuan	351	Yalong River	Mulihe River	6.55
57	Kajiwa	2008	Sichuan	452.4	Yalong River	Mulihe River	5.1
58	Huangjinpi ng	2009	Sichuan	850	Minjiang River	Daduhe River	84
59	A'hai	2009	Yunnan	2000	Yangtze River	Jinsha River	Jin'anqiao Reservoir starts reserved reservoir, and water level falls below 1,410 meters, for downstream ecological flow demand, power generation of a'hai shouldn't be less than 200MW (ecological flow equals the generation flow 286 m <sup>3</sup> /s).

60	Ludila	2009	Yunnan	2160	Yangtze River	Jinshajian g River	400
61	Houziyan	2009	Sichuan	1700	Daduhe River	Daduhe River	38.7
62	Longkaikou	2009	Yunnan	1800	Yangtze River	Jinshajian g River	380
63	Guanyinya n	2009	Yunnan	3000	Jinshajiang River	Jinshajian g River	350
64	An'gu	2009	Sichuan	680	Yangtze River	Daduhe	150
65	Liyuan	2010	Yunnan	2400	Jinshajiang River	Jinshajian g River	300
66	Lidi	2010	Yunnan	420	Lancangjiang River	Lancangji ang River	145
67	Zhenyouba I	2011	Sichuan	720	Yangtze River	Daduhe River	327
58	Shaping II	2011	Sichuan	348	Yangtze River	Daduhe River	345
69	Jinghong	2011	Yunnan	1750	Lancangjiang River	Lancangji ang River	504
70	Xunyang	2011	Shaanxi	320	Hanjiang River	Hanjiang River	190
71	Fengman	2011	Jilin	14800	Songhuajiang River	Songhuaji ang River	161
72	Miaowei	2011	Yunnan	1400	Lancangjiang River	Lancangji ang River	Since the downstream connects the backwater of the downstream reservoir Gongguoqia o, there's no need to discharge ecological
73	Mamawa I	2011	Cuizbou	558	Beipanjiang	Beipanjian	flow.
71	Yinii	2011	Huboi	120	River Hanjiang	g River Hanjiang	300
/4	Shuangjian	2011		120	River Minjiang	River Daduhe	500
75	0)	111111		· ) ( \ld			

76	Huangdeng	2012	Yunnan	1900	Lancangjiang River	Lancangji ang River	165
							No peak load regulation in Nov. to next Sept. while
77	Duobu	2012	Xizang	120	YarluZangbu River	Niyanghe River	inflow is less than 80m <sup>3</sup> /s, ecological flow equals inflow, discharged through ecological flow gate. 25.8m <sup>3</sup> /s
78	Daheigong	2013	Yunnan	240	Honghe River	Honghe River	(10% of annual average flow) in Mar. and July to Dec., 30% of annual average flow in flow spawning period (Jan., Feb. and
79	Jinggangsh an	2013	Jiangxi	133	Yangtze River	Ganjiang River	202
80	Baihe(Jiahe)	2013	Shanxi	180	Hanjiang River	Hanjiang River	120m <sup>3</sup> /s in Nov. to next Apr. 201.3 m <sup>3</sup> /s in May to Oct. No
81	Wunonglon g	2013	Yunnan	990	Lancangjiang River	Lancangji ang River	ecological flow discharge in normal period

							127m³/s in unnormal period. Minimum
82	Lianghekou	2013	Sichuan	3000	Jinshajiang River	Yalongjia ng River	flow is 94 m <sup>3</sup> /s. in fish spawning period, discharge 233 m <sup>3</sup> /s peak flow in June and July, and 200 m <sup>3</sup> /s peak
83	Jinchuan	2013	Sichuan	860	Daduhe River	Daduhe River	flow in Aug, and Sept. 130
84	Dayingjiang IV	2013	Yunnan	175	Dayingjiang River	Dayingjia ng River	>26.1 m <sup>3</sup> /s in fish growth period (June to the next Mar.), >51.7 m <sup>3</sup> /s in fish
							breeding period (Apr. and May).
85	Dahuaqiao	2013	Yunnan	920	Lancangjiang River	Lancangji ang River	244 >145m³/s in
86	Yangfanggo u	2013	Sichuan	1500	Yalong River	Yalong River	normal period, 179.2m³/s in special
							period (May and June). >28 m <sup>3</sup> /s in Apr, to July, 22 m <sup>3</sup> /s in
87	Xiasajiang first-class	2014	Yunnan	270	Honehe River	Honghe River	Aug. to the next Mar., ecological flow equals

88	Yingliangba o	2014	Sichuan	1116	Daduhe River	Daduhe River	inflow is less than ecological flow. >134.7 m <sup>3</sup> /s in normal period, >269. 4 m <sup>3</sup> /s peak flow in fish spawning period (mid- Mar. to late Apr., <i>Schizothorax</i> <i>prenanti</i> , late July to mid- Sept., <i>Schizothorax</i> <i>davidi</i> )
89	Baihetan	2014	Sichuan Yunnan	16000	Jinshajiang River	Jinshajian g River	>1160m <sup>3</sup> /s in normal period, >126 0 m <sup>3</sup> /s in fish spawning period (Mar. to July).
90	Wudongde	2015	Sichuan Yunnan	10200	Jinshajiang River	Jinshajian g River	>900 m <sup>3</sup> /s in non-fish spawning period, >116 0 m <sup>3</sup> /s in fish spawning period (March to
91	Suwalong	2015	Sichuan Xizang	1200	Jinshajiang River	Jinshajian g River	July). >152 m³/s in Mar. to Apr., 2 times none daily peak operation in mid-Mar. to Apr. lasting 7 to 10 days every

							time. >152
							m³/s in May
							to Aug., 1
							time none
							daily peak
							operation in
							Sept., lasting
							7 to 10 days
							every
							time, >152
							m³/s in Oct.
							to next Feb.
							>146 m³/s in
							reservoir
							initial filling
							and
							operation
							period,
							generate 3-4
							food pulse
•	TC 1	0015	0.1	10200	Yalongjiang	Yalongjia	lasting 10-15
2	Kala	2015	Sichuan	10200	River	ng River	days in special
							period (mid-
							Apr. to late
							May, early
							June to mid-
							July, early
							Sept. to late
							Sept.)
							>132 m <sup>3</sup> /s in
							normal
							period. >272
							$m^{3}/s$ in Mar.
							to Apr., >405
							$m^{3}/s$ in Aug
			Sichuan/Xi		Iinshaiiang	Iinshaiian	to Sept. fish
3	Yebatan	2016	Zang	2300	River	g River	spawning
			Zung		iuvei	5	period is
							Mar to Apr
							and $\Delta ug$ to
							Sent 10
							dave
							uays
							ecological

							operation in
							fish
							spawning
							period, with
							no daily
							peak
							regulation,
							and
							discharge
							ecological
							flow as
							reservoir
							inflow.
4	Fulongkou	2016	Sichuan	68	Jinshajiang River	Hengjiang River	>56.9 m <sup>3</sup> /s
					iuvei	iuvei	>145 m³/s in
							Ian to Mar
							and July to
							Nov
							maintain the
							natural flow
							in Apr. to
							June
							(spawning
							period of
							Gymnocypris
						Yellow	eckloni
5	Ma'erdang	2016	Qinghai	2200	Yellow River	River	Herzensten,
						iuvei	Gymnodiptyc
							hus
							pachycheilus,
							Triplophysa
							pappenheimi),
							with no
							daily peak
							regulation, >
							74 m³/s in
							Dec (normal
							water use
							period).
	Houziyan						r,
16	Acceptance	2016	Sichuan	1700	Daduha Dimar	Daduhe	120m3/a
סי	before	2016	Sichuan	1700	Dadune Kiver	River	~100m³/S
	reservoir						

	impoundm						
97	ent Shawan Acceptance of environmen t protection	2016	Sichuan	480	Daduhe River	Daduhe River	Ecological flow discharge method modified from small hydropower unit to two ecological flow pipes without permission of Ministry of Environmen
98	Changheba Acceptance before reservoir impoundm ent	2016	Sichuan	2600	Daduhe River	Daduhe River	tal Protection. >166.5m <sup>3</sup> /s Cascade operation with Huangjinpin and Houziyan.
99	Silin Acceptance of environmen t protection	2016	Guizhou	10500	Wujiang River	Wujiang River	Max. generation flow 1742m <sup>3</sup> /s and min. generation flow 1715m <sup>3</sup> /s in high flow period, Max. generation flow 382m <sup>3</sup> /s and min. generation flow 232m <sup>3</sup> /s in low flow period.

	Jinping II						
10 0	of environmen	2016	Sichuan	4800	Yalongjiang River	Yalongjia ng River	>45m³/s
10 1 10 2	Miaowei Acceptance before reservoir impoundm ent Nianpansha n	2016 2017	Yunnan Hubei	1400 180	Lancangjiang River Hanjiang River	Lancangji ang River Hanjiang River	null >500m³/s
10 3	Fengman reconstructi on	2017	Jilin	1002.5	Songhuajiang River	Songhuaji ang River	null
10 4	Batang	2017	Sichuan	750	Jinshajiang River	Jinshajian g River	>138m <sup>3</sup> /s in normal period, in fish spawning period, >277 m <sup>3</sup> /s in Mar. to Apr., and >413m <sup>3</sup> / s in Aug. to Sept., with at least 1- time ecological operation (lasting 10 days longer) every
10 5	Bala	2017	Sichuan	743	Daduhe River	Jiaomuzu River	month. > 69.4m <sup>3</sup> /s in reservoir initial filling period, >23.8 m <sup>3</sup> /s in operation period, and generate 1- time flood

pulse lasting
10 days
every month
in fish
spawning
period (May
to Sept.).

#### Table S3 E-flows of Water Conservancy Projects

No	Name	Time	Province	Туре	E-flows (m <sup>3</sup> /s)
1	Cha'ersen	2014	Inner Mongolia	Reservoir project/ Reservoir Reinforcement Project	Non-irrigation season (Oct. to the next Apr.), >2.53 m³/s, Irrigation season (May to Sep.), >5.06 m³/s.
2	Datengxia	2014	Guangxi	Water control project	Qianjiang main dam, >700 m³/s, Apr. to July, when inflow >3000m³/s, discharge flow equals inflow. Nanmu River auxiliary dam, no less than 3.0 m³/s.
3	Mangshan	2014	Hunan	Reservoir Project	>2.1 m3/s. Ecological operation with flood pulse in fish spawning period.
4	Chushand ian	2014	Henan	Reservoir Project	>3.55 m³/s
5	Suizhongh oushan	2014	Liaoning	Reservoir Project	>0.262 m <sup>3</sup> /s
6	Nierji	2014	Chongqin g	Water control project	>42.5 m <sup>3</sup> /s in monthly average flow.
7	Guanjingk ou	2014	Chongqin g	Water control project	1.01 m³/s~2.49 m³/s. while inflow is less than 1.01 m³/s, ecological flow equals inflow. Oct. to the next Apr., >3.54m³/s, May to
8	Yuetan	2015	Anhui	Reservoir Project	Sep. >10.62 m <sup>3</sup> /s, when inflow is less than 10.62 m <sup>3</sup> /s, ecological flow equals inflow, but couldn't be less than 3.54 m <sup>3</sup> /s.
9	Gaopo	2015	Guangdo ng	Water control project	>117 m <sup>3</sup> /s
10	Luojiu	2015	Guangxi	Water control project	>10.90 m³/s, 20% of annual average flow in fish breeding period.
11	Maling	2015	Guizhou	Water control project	>4.26 m³/s in storage period, 4.26~15m³/s in operation period, at least 10 days continuous natural inflow discharge (ecological operation) in May and June.
12	Nandujian g Water Transfer Project	2015	Hainan	Water Transfer Project	>14.4m <sup>3</sup> /s
13	Qianping	2015	Henan	Reservoir Project	Reducing water diversion, increasing ecological flow discharge during reservoir storage and operation period, optimizing ecological flow operation.

## (Approval by Ministry of Environmental Protection from 2014 to 2017)

					>9 m³/s in reservoir initial filling and
14	Huangzan gsi	2015	Qinghai	Water control project	operation period, 11~83.5 m <sup>3</sup> /s in later Apr. to June, early and mid of July, Aug. and Sep., Oct. to Nov., >110 m <sup>3</sup> /s maintaining 15 days flow in early and mid-Apr., 300 m <sup>3</sup> /s~500 m <sup>3</sup> /s maintaining 3-5 days flow in early and Mid-
15	Fendou	2015	Heilongjia ng	Water control project	July and mid-Aug. at least once ecological operation lasting 7 -10 days, in breeding period of cold-water fish, protect flow the downstream water intake sections is higher than natural flow
16	Geshan	2015	Heilongjia ng	Reservoir Project	once ecological operation maintaining 7-10 days In May, protect flow the downstream water intake sections is higher than natural flow
17	Xujixia	2015	Qinghai	Water control project	>0.87 m <sup>3</sup> /s in storage period, 0.87 m <sup>3</sup> /s~1.99 m <sup>3</sup> /s in operation period, implement ecological operation of Xujixia and Heishishan Reservoir for 1-2 flood pulse (2 year's return) in May to Sep.
18	Tuxikou	2015	Sichuan	Reservoir Project	>7.71 m <sup>3</sup> /s in reservoir initial filling and operation period, >10.32 m <sup>3</sup> /s in early Mar. to mid-May, ecological flow equal reservoir inflow while water level is lower than the level of dead water, two times ecological operation lasting 7-10 days in Mar. to Apr.
19	Dashimen	2015	Xinjiang	Water control project	>4.65 m <sup>3</sup> /s in reservoir water filling period, no less than, 2.76-8.28 m <sup>3</sup> /s in operation period.
20	Dehou	2015	Yunnan	Reservoir Project	>0.602 m³/s in Dec. to the next May, >1.806 m³/s in June to Nov.
21	Jiangxiang	2016	Anhui	Reservoir Project	<ul> <li>&gt;0.5 m³/s in Oct. to the next Mar. ecological flow equals inflow while reservoir inflow is less than 0.5m³/s, but couldn't be less than 0.2m³/s,</li> <li>&gt;1.5 m³/s in Apr. to Sept., ecological flow equals inflow while reservoir inflow is less than 1.5m³/s, but couldn't be less than 0.6m³/s.</li> </ul>
22	Huokou	2016	Fujian	Water control project	>10.2 m <sup>3</sup> /s in Oct. to the next Mar., >12.3 m <sup>3</sup> /s in Apr.to Sept., generate at least 3 times water level rise and lasting 1 to 2 days every time with flood peak >37 m <sup>3</sup> /s.
23	Pingtan and Minjiang	2016		Water Resources Allocation Project	>13.8 m³/s in Oct. to the next Mar., >23.2 m³/s in Apr. to Sept.

	Estuary				
24	Fuying	2016	Guangxi	Reservoir and Irrigation Project	>1.73 m³/s in Nov. to the next Mar., > 3.87 m³/s in Apr. to Oct., Generate ecological operation in May to July, lasting 3-5 days.
25	Huangjia wan	2016	Guizhou	Water control project	>2.04 m³/s in Nov. to the next Apr., >5.4 m³/s in May to Oct., discharge inflow while reservoir inflow is less than ecological flow.
26	Yakou	2016	Hubei	Shipping	>450 m³/s
27	Maojun	2016	Hunan	Reservoir Project	>1.5 m³/s in Aug. to the next Feb., >3.6 m³/s in Mar. to July.
28	Hekoucun Huangshu	2016	Henan	Reservoir Project	>5.0 m³/s
29	i North Canal Phase II	2016	Qinghai	Irrigation project	>4.0 m³/s in Nov. to the next Apr., >1.69 m³/s in May to Oct.
30	River to Huangshu ihe River Water Transfer Project- West Canal	2016	Qinghai	Water Transfer Project	>4.0 m³/s in Nov. to the next Apr., >1.69 m³/s in May to Oct.
31	Huangshi pan	2016	Sichuan	Reservoir Project	>6.62 m <sup>3</sup> /s in Mar. to July, >3.31 m <sup>3</sup> /s in Aug. to the next Feb.
32	Lijiayan	2016	Sichuan	Reservoir Project	>4.38 m <sup>3</sup> /s in Apr. to June, >3.11 m <sup>3</sup> /s in July to the next Mar., generate at least two times water rise lasting 5-7 days, with flood peak> 7.18 m <sup>3</sup> /s.
33	Dashixia	2016	Xinjiang	Water control project	>46.35 m³/s in May to Oct., >15.45 m³/s in Nov. to the next Apr.
34	Bai'se	2016	Guangxi	Water control project	>100 m <sup>3</sup> /s
35	Chaishita n	2016	Yunnan	Reservoir and Irrigation Project	>15 m³/s in June to Oct., > 5.4 m³/s in the dam site in normal period,>5.82 m³/s in the downstream Goujiezha section in normal period
36	A'gang	2016	Yunnan	Reservoir Project	>2.08 m <sup>3</sup> /s in Nov. to the next May, >6.23 m <sup>3</sup> /s in June to Oct.
37	Gangkou wan	2017	An'hui	Reservoir and Irrigation Project	Aug. to the next Mar., Gangkouwan section>3.0 m³/s, Liucun Dam section>3.1 m³/s, Tonggong Dam section>6.9 m³/s, Apr. to July, Gangkouwan section>9.0 m³/s.

					Liucun Dam section>9.3 m <sup>3</sup> /s, Tonggong Dam
					section>20.7 m <sup>3</sup> /s.
				Water control	>4.8 m <sup>3</sup> /s in Oct. to the next Mar., >9.2 m <sup>3</sup> /s in
38	Bailai	ailai 2017	Fujian	water control	Apr. to Sept., generate 3-6 water level rise in
				project	fish spawning period (Apr. to June)
20	linvi	2017	Heilongjia	Luciantian Duciant	Stop water intake while the flow is less than
39	JIIIXI	2017	ng	inigation rioject	758-776 m³/s in May to Aug.
					>5.27 m <sup>3</sup> /s in Apr. to Aug., $>3.51$ m <sup>3</sup> /s in Sept.
40	Guanmen	2017	Heilongjia	Reservoir Project	to Oct., >1.76 m³/s in Jan. to Mar., Nov. to
40	zuizi	2017	ng	Reservoir i roject	Dec., generate 1-time flood peak in July to
					Aug.
					>7.71 m <sup>3</sup> /s in Linhai Reservoir and >10.59 m <sup>3</sup> /s
					in Tuanjie water intake project in late Apr. to
					Mid-Sept., >2.57 m <sup>3</sup> /s in Linhai Reservoir
/11	Linhai	2017	Heilongjia ng	Reservoir Project	and >3.53 m³/s in Tuanjie water intake project
41	LIIIIai	2017			in late Spet. To Mid-Apr., generate 1-time
					flood oprateion in late Apr. to early May,
					lasting 24 hours with flood peak 75m³/s and
					3.15×10 <sup>6</sup> m <sup>3</sup> runoff
	Nalinggol			Water control	>5.48 m³/s in normal period, >11.82 m³/s in
42	o	2017	Qinghai	project	May to Sept., generate 1-time flood peak in
	C			project	June and Sept.
	Chaoer				Wendegen Reservoir >14 27 m³/s~22 65 m³/s
	River to				Chaole Reservoir> 15.46 $m^3/s^2$ 4.54 $m^3/s$ in
	Xiliaohe		Inner	Water transfer	Apr. to Sept. $>5.2 \text{ m}^3/\text{s}$ in Oct. to the next Mar.
43	River	2017	Mongolia	project	discharge inflow while reservoir inflow is less
	Water		Liaoning	Project	than ecological flow, but couldn't be less than
	Transfer				1.28m <sup>3</sup> /s
	Project				1.2011 /0.