Clear time (seconds)	90					This is how long it takes you to clear an Abyss chamber.
Enemy HP particles	Default					Enemies drop a total of 9 clear particles
Particle RNG	Average					Change this if you want to have enough ER even when you get unlucky on particle RNG.
Rotation mode	Fixed					Every character uses skills and bursts on a fixed rotation. Change to "Flexible" for the classic view.
Rotation length	20					How long it takes you to complete one rotation
Character		Mualani	Kinich	Kachina	Sethos	
Skill cooldown		6	18	0	8 / 0	Skill cooldown is just for reference and does not affect any calculations.
Skill particles generated		4.5	5	4	2 / 0	The number of particles generated by each use of the skill.
Turret particles per second						Turrets are skills that generate particles over time, such as Fischl's Oz.
Turret uptime						
Skill uses per rotation (primary type)		Skill 2	Skill 2	Mounted 2	Press 1	This is the number of times you use a character's skill for each time you use their burst.
Skill uses per rotation (secondary type)					Full CA 3	If you use another type of skill, this is how many times you use that type
Feed particles to ally						This is who will catch the elemental particles. "Don't Know" counts as off field particles for everyone.
Proportion of particles fed						If a character catches some of their own particles and feeds some, this is what percentage is fed.
Favonius triggers per rotation						This is the number of times a Favonius effect triggers for each time you use a character's burst.
Bonus non-particle energy per rotation						This is flat energy from various sources such as constellations and weapons.
Time on field		50%	20%	20%	10%	This is the portion of time a character spends on field. It affects turret and HP particle energy.
Number of rotations between bursts		1	1	1	1	This is how often you use each character's burst. It will typically depend on your team's rotation.
Burst cooldown		15	18	18	15	
Burst energy cost (after discount)		60	70	70	60	
Total energy recharge needed		142%	159%	178%	363%	If you don't use a character's burst, ignore their ER needs and put the rotation length as burst time.

Element	Hydro	Dendro	Geo	Electro	
Particle gen per second from primary skill	0.45	0.50	0.40	0.10	**Mualani's Sharky Bites can generate particles once per Skill use. Mualani's C4 restores 8 energy per puffer. She will gain 2 puffers per Skill. Put this in "Bonus non-particle Energy"**
Particle gen per second from secondary skill	0.00	0.00	0.00	0.00	**Kinich's Scalespiker Cannon can generate particles once per Skill use. Kinich's C4 restores 5 Energy after using Loop Shots or Scalespiker Cannon. Put this in "Bonus non-particle Energy"**
Particle gen per second from Favonius	0.00	0.00	0.00	0.00	
Energy from Mualani	27.00	5.40	5.40	5.40	**Kachina generates particles per skill hit. If Nightsoul points are used to move around, she may generate less energy. C2 adds skill hits. Add .33 skills if C2.**
Energy from Kinich	6.00	30.00	6.00	6.00	
Energy from Kachina	4.80	4.80	24.00	4.80	**If Sethos does not use his burst, switch to fixed rotation mode (cell C5).**
Energy from Sethos	1.20	1.20	1.20	6.00	
Energy from HP particles	3.20	2.72	2.72	2.56	
Energy from other sources	0.00	0.00	0.00	0.00	
Total energy per burst	42.20	44.12	39.32	24.76	

Copy or download this spreadsheet to edit it yourself

To enable Advanced Mode, unhide rows 15-26	
Made by Zakharov29229 from the KeqingMains discord	
The Energy Recharge Calculator guide is available here	
The latest version is available here	
Current version	1.58.2
Latest version	1.58.2
Abyss version	N/A

Flat Energy	R1	R2	R3	R4	R5	
Amenoma Kageuchi	6 per skill use	7.5 per skill use	9 per skill use	10.5 per skill use	12 per skill use	
Katsuragikiri Nagamasa	6 per trigger	7.5 per trigger	9 per trigger	10.5 per trigger	12 per trigger	
Kitain Cross Spear	6 per trigger	7.5 per trigger	9 per trigger	10.5 per trigger	12 per trigger	This is after the drain; if there is no energy to consume, add 3 flat energy.
Prototype Amber	12	13.5	15	16.5	18	
Everlasting Moonglow	0.6 per NA	0.6 per NA	0.6 per NA	0.6 per NA	0.6 per NA	
Shimenawa's Reminiscence	-15 per skill use					
Scroll of the Hero of Cinder Cit	Add 6 energy per Nightsoul Burst					
Scholar	3 for all bow and catalyst users every time this character gets a particle on-field, with 3s cooldown					
The Exile	6 for all party members except the wearer					
Character abilities	See the character explanation in the bottom of the green section					
Normal attacks	See the wiki for more information					

	HP Particles Dropped								Energy Collected								
Chamber	_Clear	_Anemo	_Cryo	_Dendro	_Electro	_Geo	_Hydro	_Pyro	Clear	Anemo	Cryo	Dendro	Electro	Geo	Hydro	Pyro	None	Description
Default	9	0	0	0	0	0	0	0		18	18	18	18	18	18	18		Enemies drop a total of 9 clear particles
No Particles	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0		Enemies drop no particles
Custom	9	0	0	0	0	0	0	0		18	18	18	18	18	18	18		Enter the number of clear particles dropped by enemies
										0	0	0	0	0	0	0		Enemies drop a total of
										0	0	0	0	0	0	0		Enemies drop a total of
										0	0	0	0	0	0	0		Enemies drop a total of
										0	0	0	0	0	0	0		Enemies drop a total of
										0	0	0	0	0	0	0		Enemies drop a total of
										0	0	0	0	0	0	0		Enemies drop a total of

	Edit this section with the total particles generated on each chamber half	Don't edit this section
12-1-1		
12-1-2		
12-2-1		
12-2-2		
12-3-1		
12-3-2		

Put these labels in A6:A11 if you add abyss particle information. I've stopped doing this due to effort

1.58.2

Fixed Xilonen skill CD

1.58.1

Added Xilonen note

1.58.0

Added Xilonen and Scroll note

1.57.0

Added Kinich

1.56.1

Changed Mualani and added Kitain note

1.56.0

Added Kachina and Mualani

1.55.1

Changed default rotations per burst from 0 → 1

1.55.0

Added Emilie

1.54.0

Added Sigewinne

1.53.0

Added Sethos

Added functionality for skills to generate flat energy, this is used by Sethos and Nilou C4.

Added the option of 0 rotations between bursts for characters that do not use their burst; this is only really useful for Sethos.

1.52.1

Changed Alhaitham and fixed Clorinde CD

1.52.0

Added Clorinde

1.51.3

Added Yoimiya note

1.51.2

Fixed some error highlighting

1.51.1

Fixed mislabeling of previous version

1.51.0

Added Arlecchino

1.50.1

Changed Chiori particle variance

1.50.0

Added Chiori

1.49.2

Fixed particle distribution for turret skills used as secondary skill

1.49.1

Fixed typo on Gaming's note. Previous note said energy on C2

1.49.0

Added Gaming and Xianyun

1.48.0

Added Chevreuse

1.47.1

Changed Furina's particle generation to account for procs not lining up perfectly with ICD

1.47.0

Added Navia

1.46.0

Added Furina and Charlotte

1.45.0

Added Wriothesley

1.44.0

Added Neuvillette

1.43.0

Added Freminet

Fixed Faruzan particle variance and updated help text

1.42.1

Fixed Hydro Traveler particle data

1.42.0

Added Lyney, Lynette and Hydro Traveler. Hydro Traveler particles are uncertain and may be updated based on further information.

1.41.2

Fixed bug which didn't allow selecting "don't know" as feed target

1.41.1

Added Dehya C2 effect

1.41.0

Updated Abyss HP particles for version 3.7

1.40.0

Added Kirara

1.39.0

Added Baizhu and Kaveh

Updated abyss HP particles to 3.6

1.38.4

Fixed variance calculations for turret skills

1.38.3

Removed variance from Nahida particle generation

1.38.2

Fixed bug in fischl calcs for 0 skill uses

1.38.1

Fixed bug related to using two different kinds of turret skills on the same character

1.38.0

Added Mika with estimate of particle generation, may be updated based on further information

Updated some help text for fixed rotation mode

Added link to ERC guide

Added Childe as another name for Tartaglia

1.37.0

Added a choice to use either fixed rotation mode or flexible rotation mode. This is a big change and may have introduced bugs.

Fixed some bugs in advanced mode

Updated abyss HP particles for 3.5

1.36.0

Added Advanced Mode. Enable this by unhiding rows 14-25

Rewrote energy calculations. This shouldn't have any effect unless you use advanced mode, but may introduce bugs.

1.35.0

Fixed a bug in the previous bugfix

1.34.0

Fixed a bug in calculating the particles caught by a character who feeds only some of their particles

1.33.0

Added Dehya

Added "Don't Know" option for particle feeding

Rewrote energy calculations. This shouldn't have any effect, but may introduce bugs.

1.32.1

Fixed incorrect enemy particle data

1.32.0

Removed error highlighting when Raiden doesn't have flat energy (hyperbloom teams don't usually use raiden burst)

Updated enemy HP particles for 3.4 abyss

1.31.0

Reduced Alhaitham particle generation from 7 to 6 based on further testing

1.30.0

Added Alhaitham and Yaoyao

1.29.0

Fixed bug in Fischl particle generation

1.28.0

Fixed bug in turret particle generation

1.27.0

Fixed bugged Faruzan C6

Updated Abyss to 3.3

1.26.2

Updated Faruzan C6 to work as a turret

1.26.1

Added Faruzan C6 proc partile gen

1.26.0

Added Wanderer

Added Faruzan

1.25.0

Added Layla

Fixed some incorrect particle values

1.24.2

Added HP particle info for 3.2 abyss

1.24.1

Added more options for Tartaglia

1.24.0

Added Nahida

1.23.0

Added Nilou

1.22.3

Fixed bug with Dori

1.22.2

Fixed bug with particle feeding

1.22.1

Fixed bug with Dendro Traveller

1.22.0

Added Cyno and Candace

Allowed for the use of two different skill types (e.g. Kazuha doing 1 press and 1 hold)

1.21.2

Fixed bug in particle feeding menu

1.21.1

Fixed Diona and Yae particle generation in safe and worst-case scenarios

1.21.0

Added Dori

1.20.3

Automatically calculate Dendro Traveler C1 flat energy

1.20.2

Added Kuki Shinobu C4 particle generation

1.20.1

Fixed dendro not working with electro resonance

1.20.0

Added Collei, Tighnari, Traveler (Dendro)

1.19.2

Added missing skill cooldowns to some alternate skill uses

1.19.1

Fixed formatting issues when downloading as Excel spreadsheet

1.19.0

Updated to 2.8 abyss

1.18.1

Added Heizou C4 to help text

1.18.0

Added Heizou with particles based on data mine

Updated Kuki Shinobu particles to 45% chance based on data mine

1.17.2

Added Klee help text

Added Kuki Shinobu as a synonym for Shinobu

1.17.1

Fixed description of abyss HP particles

1.17.0

Added Shinobu

1.16.0

Updated to 2.7 abyss

1.15.0

Added Yelan

1.14.2

Updated help text

Added guide link

Added table of flat energy sources

Fixed Fischl particle generation

1.14.1

Fixed error highlighting

1.14.0

Corrected an error in the abyss HP particles for 12-1-2

1.13.1

Updated Sara and Sayu skill options

1.13.0

Updated abyss HP particles for version 12.6

1.12.0

Added option to select "Nobody" so you can have 1-3 character teams. This includes increased energy received from off-field particles

Fixed error when changing character results in invalid particle feeding

Added error message when Yae uses her skill 3 times (one skill use represents 3 totems)

Fixed incorrect error highlighting

1.11.1

Added "hybrid" option to Ayato

Fixed missing skill cooldown for off-field Ayato

1.11.0

Added Ayato

Changed how calculations are displayed in the bottom section

1.10.2

Added abyss particles for new abyss

1.10.1

Removed abyss particles. Will be updated for new abyss shortly

1.10.0

Added Yae Miko

1.9.0

Fixed bug in 4th character field time calculations

1.8.0

Fixed bug in Kokomi ER calculations

Fixed bug which didn't allow feeding favonius particles from a turret character

1.7.0

Added changelog

Added abyss chambers to enemy HP particle selection

Replaced "press/hold" with character-specific skill types

Added particle RNG setting