Web Sustainability Guidelines 1.0

Summary Table & Checklist

2.1	Undertake Systemic Impacts Mapping						
	Success Criterion						
	List the negative external variables and identify where your product's sustainable impact can be diminished (systemic design).						
	Impact & Effort	Med	lium	Med	lium		
	GRI	RI Medium Medium Medium Medium					
2.2	Assess and Resear	ch Visitor Needs					
	Success Criterion						
	quantitative or qual		ing, or analytics, ens	eir needs are defined suring your visitors a g process.			
		nstraints like the devi ered when designing		ystem version, brows	ser, and connection		
				l, material, or human duces barriers or imp			
	In the user-research dark / deceptive de		visitors if some barrie	ers should be remove	ed (pain points or		
				ng iterative design wo n the decision-makin			
	Impact & Effort	Med	lium	Hi	gh		
	GRI	Medium	Medium	Medium	Medium		
2.3	Research Non-Visit	or's Needs					
	Success Criterion						
	digital product or se		bors accepting pard	who might be passive cels, traffic jams due fected.			
	Impact & Effort	Med	lium	Med	lium		
	GRI	Medium	Medium	Medium	Medium		
2.4	Consider Sustainab	oility in Early Ideation					
	Success Criterion						
		and rapid prototypings s needed to build fe		nsensus, reduce risk	x, and lower the		

	Involve your users within the iteration and design process using participatory design, and when conducting user-testing reach out to your community to help improve your product by allowing them to apply their knowledge and experience to your product or service.				
	Impact & Effort	Lo)W	Low	
	GRI	Low	Low	Low	Low
2.5	Account for Stakeh	older Issues			
	Success Criterion				
	In the brainstorming	g process, consider	all stakeholders usin	g a human-centered	approach.
	In the brainstorming	g process, take the p	planetary needs and	ecological boundario	es into account.
	Impact & Effort	Med	lium	Med	lium
	GRI	Medium	Medium	Medium	Medium
2.6	Create a Frictionles	s Lightweight Exper	ience by Default		
	Success Criterion				
	Prioritize performar	ce optimization as a	product or service's	s default approach.	
	efficient and as sim	ple as possible (time	e required to comple	n the website or serv te an action displaye start of a complex s	ed, reducing too
				ite or service) as smo atterns which people	
	Visitors can comple	ete tasks without dis	tractions or non-ess	ential features gettin	g in the way.
	Visitors see only inf being displayed on		vant to their experier	nce, without non-ess	sential information
	Ensure that actiona visitor.	ble information such	as pop-up or moda	al windows can only	be initiated by the
	Impact & Effort	Med	lium	Med	lium
	GRI	Medium	Medium	Medium	Medium
2.7	Avoid Unnecessary	or an Overabundan	ce of Assets		
	Success Criterion				
	_		•	xperience, and unner ved (or rendered opt	-
	Impact & Effort	Hi	gh	Med	lium
	GRI	High	High	High	High
2.8	Ensure Navigation a	and Way-Finding Are	e Well-Structured		
	Success Criterion				
	Provide an accessil find what they need		igation menu with se	earch features that h	elp visitors easily

	Implement an efficient (human-readable) sitemap that is organized and regularly updated helps search engines better index website content, which helps visitors more quickly find what they are looking for.						
	Provide a way for v	isitors to find out abo	out new content and	I services.			
	Impact & Effort	Lo	ow .	Lo	w		
	GRI	Medium	Low	Medium	Low		
2.9	Respect the Visitor	's Attention					
	Success Criterion						
	Respect a visitor's information.	attention by allowing	them to easily cont	rol how (and when) t	hey receive		
	Prioritize features the product or serv	-	ople or unnecessarily	y lengthen the time t	hey spend using		
	Avoid using infinite	scroll or related atte	ntion-keeping tactic	S.			
	Impact & Effort	Med	lium	Lo	w		
	GRI	Medium	Medium	Medium	Medium		
2.10	Use Recognized De	esign Patterns		-			
	Success Criterion						
				are needed. Where apsily recognized and u			
	Impact & Effort	npact & Effort Medium Low					
	GRI	Medium	Low	Medium	Low		
2.11	Avoid Manipulative	Patterns					
	Success Criterion						
	techniques, which r		nto taking actions no	ve design, or unethic ot necessarily in their			
		nting them when the		rly identified with the mic and ethical value	•		
	Remove unused an	d unconsented page	e tracking.				
	Impact & Effort	Hi	gh	Med	lium		
	GRI	Low	Low	Low	Low		
2.12	Document and Sha	re Project Outputs					
	Success Criterion						
	Success Criterion						
	The deliverables ou			upstream of the pro	ject and produced		

	Impact & Effort	Med	lium	High			
	GRI	Medium	Medium	Medium	Medium		
2.13	Use a Design System To Prioritize Interface Consistency						
	Success Criterion						
		stem based on web rovide a consistent e		gnizable patterns to s.	mutualize interface		
	Impact & Effort	Lo	w	Med	lium		
	GRI	Medium	Low	Medium	Low		
2.14	Write With Purpose	, in an Accessible, E	asy To Understand F	ormat			
	Success Criterion						
				easy-to-understand as required (for exan			
		natted in ways that s rarchy, headings, bu		read online, including sing, and so on.	g a clear document		
	Prioritize SEO at ea content findability.	rly design stages an	d throughout a prod	uct or service's lifecy	ycle to improve		
	Impact & Effort	Lo	W	Lo	DW		
	GRI	Medium	Low	Medium	Low		
2.15	Take a More Sustai	nable Approach to Ir	nage Assets				
	Success Criterion						
	Assess the need for implementation.	r images considering	the quantity, forma	t, and size necessary	y for		
	Resize, optimize an image) for different		age (outside the bro	wser), offering differ	ent sizes (for each		
	Provide Lazy Loadi	ng to ensure image a	assets only loads wh	en they are required			
	Let the visitor selec	t the display size, an	d provide the option	n to deactivate image	es.		
		nagement and use p sion and file formats.		overall impact of imag	ges, with criteria		
	Impact & Effort	Hiç	gh	Lo	oW .		
	GRI	High	High	High	High		
2.16	Take a More Sustai	nable Approach to M	ledia Assets				
	Success Criterion						
		r video or sound usa dia (background me		hen they add visitor aying functionality.	value), and ban		
	_			g to the visitor's req rowsers, and avoidir			

	Increase visitor awareness and control by informing them of the length, format, and weight of the media; allowing media deactivation, and giving a choice of resolutions; all while providing alternative resolutions and formats.					
		nagement and use pompression and file t		overall impact of aud	io and video, with	
	Impact & Effort	Hi	gh	Med	lium	
	GRI	High	High	High	High	
2.17	Take a More Sustai	nable Approach to A	nimation			
	Success Criterion					
	Use animation only	when it adds value	to a visitor's experie	nce, and not for dec	orative elements.	
	Progressively displadiminish expected of		antity of animation s	so as not to overburd	len the visitor or	
	Allow visitors to sta	rt, stop, pause or ot	herwise control anim	nated content.		
	Impact & Effort	Med	lium	Lo	DW .	
	GRI	High	High	High	High	
2.18	Take a More Sustai	nable Approach to T	ypefaces			
	Success Criterion					
	Use standard system-level (web-safe / pre-installed) fonts as much as possible.					
			riants within typeface performant file forma	es (such as weight a at available.	nd characters) are	
	Impact & Effort	Med	lium	Lo	DW .	
	GRI	Medium	Medium	Medium	Medium	
2.19	Provide Suitable Alt	ternatives to Web As	sets			
	Success Criterion					
	All proprietary file for ensure future availa	•) should also be offe	ered in HTML for acc	essibility and to	
	All custom typeface with a system font a	` • •	y) should be subsette	ed and offered as pa	rt of a font stack	
	All images should p to load) accessibilit		Iternative text for scr	reen reader users (or	when images fail	
	Audio should provid	de text transcripts of	conversations as ar	n alternative to playir	ng the media.	
	-		t minimum), subtitles I sign language optic	s (using WebVTT), an ons.	nd for accessibility	
	Impact & Effort	Med	lium	Med	lium	
	GRI	Medium	Medium	Medium	Medium	
2.20	Provide Accessible	, Usable, Minimal We	eb Forms			
	Success Criterion					

	Assess the need for forms and reduce form content to the bare minimum necessary to meet the visitor's needs and the organization's business goals. Clearly communicate why a form is necessary, what its value proposition is, how many steps it will take to complete, and what an organization will do with collected data (informed consent).					
	-		•	elpful (to conserve ba f helpful tooling such	•	
	Impact & Effort	Lo	ow .	Lo	ow	
	GRI	Medium	Low	Medium	Low	
2.21	Support Non-Graph	nic Ways To Interact	With Content			
	Success Criterion					
	Support speech broalternatives to a vis		n-graphical ways to	interact with content	t that provide	
	Impact & Effort	Lo	w	Med	lium	
	GRI	Medium	Low	Medium	Low	
2.22	Provide Useful Noti	fications To Improve	the Visitor's Journey	y		
	Success Criterion					
		is strictly necessary.		ucing the practice of (such as alerts for n		
		nces, and the option		browser, SMS, or by out, and close an acc		
		ge expectations by c d messages that exp		result of a potential os, and so on.	input through	
	Impact & Effort	Lo	w	Lo	ow .	
	GRI	Medium	Low	Medium	Low	
2.23	Reduce the Impact	of Downloadable or	Physical Documents	S		
	Success Criterion					
	should be designed	I to limit its impact to	the lowest possible	tion of paper docume. Create a CSS Print encouraged over pa	t stylesheet and	
	Offer optimized, co	mpressed document	ts in a variety of acce	essible file formats.		
	Clearly display the document name, a summary, the file size, and the format, allowing the visitor a choice if possible of both the format, and the language (if not the same as the web page). Furthermore, be sure to avoid embedding the document within Web pages (provide a direct link to download or view within the browser instead).					
	Impact & Effort	Med	lium	Lo)W	
	GRI	Medium	Low	Medium	Low	
2.24	Create a Stakehold	er-Focused Testing 8	& Prototyping Policy	-		

	Success Criterion					
	and user-interface of	components when a ding people with slow	pplicable with real us	e and test new featur sers who represent v lisabilities, with diffic	arious stakeholder	
	The organization haviability.	s appropriately reso	ourced these process	ses to support its lon	g-term product	
	The organization ha	s training materials	to onboard new prod	duct team members	to these practices.	
	_		ensive testing and u	ser interviews to vali or needs.	date whether the	
	Impact & Effort	Hi	gh	Med	lium	
	GRI	High	High	High	High	
2.25	Conduct Regular A	udits, Regression, a	nd Non-Regression	Tests		
	Success Criterion					
				sues, and account fo (depending on your		
	Non-regression tes	ts are implemented	for all important func	tionality.		
	Incorporate regression testing into each release cycle to ensure that new features don't introduce bugs or otherwise conflict with existing software functionality.					
	Impact & Effort Medium Medium					
	Impact & Effort	Med	dium	Med	lium	
	Impact & Effort GRI	Medium	dium Medium	Medium	lium Medium	
2.26	GRI		Medium			
2.26	GRI	Medium	Medium			
2.26	GRI Analyze the Perform Success Criterion Only collect the dat place to ensure strice	Medium nance of the Visitor of the	Medium Journey e a streamlined and comply with relevant a		Medium y, put policies in	
2.26	GRI Analyze the Perform Success Criterion Only collect the dat place to ensure strice	Medium nance of the Visitor of the	Medium Journey e a streamlined and comply with relevant a	Medium effective user-journe	Medium y, put policies in and privacy laws,	
2.26	GRI Analyze the Perform Success Criterion Only collect the dat place to ensure strict such as the General	Medium nance of the Visitor of the	Medium Journey e a streamlined and comply with relevant agulation (GDPR).	Medium effective user-journer	Medium y, put policies in and privacy laws,	
2.26	GRI Analyze the Perform Success Criterion Only collect the dat place to ensure strict such as the General Impact & Effort GRI	Medium nance of the Visitor of the	Medium Journey e a streamlined and comply with relevant a egulation (GDPR). dium Medium	Medium effective user-journer accessibility policies	Medium y, put policies in and privacy laws,	
	GRI Analyze the Perform Success Criterion Only collect the dat place to ensure strict such as the General Impact & Effort GRI	Medium nance of the Visitor of the	Medium Journey e a streamlined and comply with relevant a egulation (GDPR). dium Medium	Medium effective user-journer accessibility policies	Medium y, put policies in and privacy laws,	
	GRI Analyze the Perform Success Criterion Only collect the dat place to ensure strice such as the General Impact & Effort GRI Incorporate Value T Success Criterion Consider visitor fee	Medium nance of the Visitor a required to provide ct adherence, and coll Data Protection Re Medium esting Into Each Ma	Medium Journey e a streamlined and a comply with relevant a comply	Medium effective user-journer accessibility policies	Medium y, put policies in and privacy laws, w Medium	
	GRI Analyze the Perform Success Criterion Only collect the dat place to ensure strice such as the General Impact & Effort GRI Incorporate Value T Success Criterion Consider visitor fee	Medium nance of the Visitor a required to provide ct adherence, and coll Data Protection Re Medium Medium desting Into Each Mag dback and monitor and sinto future release	Medium Journey e a streamlined and a comply with relevant a comply	Medium effective user-journer accessibility policies Lo Medium	Medium y, put policies in and privacy laws, w Medium ervice features,	
	GRI Analyze the Perform Success Criterion Only collect the dat place to ensure strice such as the General Impact & Effort GRI Incorporate Value T Success Criterion Consider visitor feetincorporating insight	Medium nance of the Visitor a required to provide ct adherence, and coll Data Protection Re Medium Medium desting Into Each Mag dback and monitor and sinto future release	Medium Journey e a streamlined and a comply with relevant a comply	Medium effective user-journer accessibility policies Lo Medium	Medium y, put policies in and privacy laws, w Medium ervice features,	
	GRI Analyze the Perform Success Criterion Only collect the dat place to ensure strice such as the General Impact & Effort GRI Incorporate Value T Success Criterion Consider visitor feet incorporating insigh Impact & Effort GRI Impact & Effort GRI	Medium nance of the Visitor of the	Medium Journey e a streamlined and comply with relevant a egulation (GDPR). Jium Medium jor Release-Cycle adoption and churn res.	Medium effective user-journer accessibility policies Lo Medium rates of product or se	Medium y, put policies in and privacy laws, w Medium ervice features,	

	Incorporate usability testing into product cycles and measure the impact of these tests for future releases.					
	Impact & Effort	Medium		Medium		
	GRI	Medium	Medium	Medium	Medium	
2.29	Incorporate Compa	tibility Testing Into E	ach Release-Cycle			
	Success Criterion					
				d software versions, s (including versions	•	
	possible and clearly	communicating wh	ether an update is e	o maintain compatibi volutionary (large upo ates that fix bugs or	dates that can	
	Regularly test the p than five years to en		th weak connections	s, old browsers, and	on devices older	
		rfaces using mobile- nproved accessibility		ure progressive enha	incement, content	
	Consider whether a application.	PWA will be more s	ustainable and com	patible over a native	mobile	
	Impact & Effort	Hiç	gh	Med	ium	
	GRI	High	High	High	High	
3.1	Identify Relevant Te	chnical Indicators				
	Success Criterion					
		pals which impact the he amount of DOM e		performance of the set to be rendered.	ervice, for example	
	Impact & Effort	Med	lium	Med	ium	
	GRI	Medium	Medium	Medium	Medium	
3.2	Minify Your HTML,	CSS, and JavaScript	t			
	Success Criterion					
	All source code is n	ninified upon compile	ation (including inline	e code).		
	Impact & Effort	Lo	W	Lo	W	
	GRI	Low	Low	Low	Low	
3.3	Use Code-Splitting	Within Projects				
	Success Criterion					
	Breakdown bandwi	dth-heavy compone	nts into segments th	nat can be loaded as	required.	
	Impact & Effort	Med	lium	Lo	W	
	GRI	Medium	Medium	Medium	Medium	
3.4	Apply Tree Shaking	To Code				

	Success Criterion						
	Identify and eliminate unused and dead code within CSS and JavaScript.						
	Impact & Effort	Med	lium	Medium			
	GRI	Medium	Medium	Medium	Medium		
3.5	Ensure Your Solution	ons Are Accessible					
	Success Criterion						
	to obey relevant law means that people	plication must conforms and meet addition with permanent, tem ooking for, and not h	nal visitor accessibili nporary or situationa	ty requirements. Buil I disabilities will be a	Iding inclusively ble to more quickly		
		site or application wi ssary, and accessibil					
	Deploy solutions w	hich fight against ele	ectronic inequalities i	n products and serv	ices.		
	Impact & Effort	Hi	gh	Med	lium		
	GRI	Medium	Medium	Medium	Medium		
3.6	Avoid Code Duplication						
	Success Criterion						
		emove or simplify (th and have a cleaner, le			ode to focus on		
		existing creation rat cation of coding effo					
		vaScript, use method gement and output o		and systems like DR	Y and WET to		
	Impact & Effort	Med	lium	Med	lium		
	GRI	Medium	Medium	Medium	Medium		
3.7	Rigorously Assess	Third-Party Services					
	Success Criterion						
	ideation or creation	services (including p process as possible ological impact, incl	and use as few as	possible to reduce th	, -		
	Third-party content (including plugins, widgets, feeds, maps, carousels, etc) should be placed behind a click-to-load delay screen (using the "import on interaction" pattern), while alternatives to automated solutions such as chatbots should be offered.						
		and JavaScript fran chieves the same go			erformant		
	Prioritize self-hoste	ed content over embe	edded content from	third-party services.			
	-	ickable icons and wi	_	lying on third-party s	services to host or		

	Impact & Effort	Hi	gh	Med	lium			
	GRI	High	High	High	High			
3.8	Use HTML Elements Correctly							
	Success Criterion							
	Ensure content is m	narked up semantica	ally using the right H	ΓML element for the	right job.			
	Consider removing optional HTML tags (which aren't required for rendering), attribute quotes, or attributes that are set to their default value.							
	Avoid using non-standard elements or attributes.							
			nponents if you cann the implementation o					
	Impact & Effort	Med	dium	Med	lium			
	GRI	Medium	Medium	Medium	Medium			
3.9	Resolve Render Blo	ocking Content						
	Success Criterion							
	All external assets should be deferred or set to async (unless required) to avoid FOUC (Flash Of Unstyled Content).							
	If external resource	s are required on loa	nd, ensure their priori	ities (delivery route) a	are set correctly.			
	Impact & Effort	Med	dium	Lo)W			
	GRI	Medium	Medium	Medium	Medium			
3.10	Provide Code-Base	ed Way-Finding Mec	hanisms					
	Success Criterion							
	Optimize your meta	data and microdata	for search engines a	and social media.				
	Assist search engin	es, while blocking a	ny ill-intentioned rob	ots and scripts.				
	Offer accessibility a	and usability aids to	find content, such as	s skip links and sign	oosts.			
	Impact & Effort	Lo	ow .	Lo	DW .			
	GRI	Low	Low	Low	Low			
3.11	Validate Form Error	s and External Input						
	Success Criterion							
	Errors should be ide	entified through live	validation as well as	upon submission.				
			entified and labeled (and optional element					
	Always allow the pa	asting of content (inc	cluding passwords) fi	rom external sources	S			
	Impact & Effort	Med	dium	Lo	DW .			
	GRI	Medium	Medium	Medium	Medium			

3.12	Use Metadata Correctly					
	Success Criterion					
	Include the required	d title element, plus a	any optional HTML h	ead elements (such	as link).	
		meta tag references t cheme such as Dubli				
	Embed Microdata,	Structured Data (Sch	nema), or Microforma	ats within your pages	S.	
	Impact & Effort	Med	ium	Lo	w	
	GRI	Medium	Medium	Medium	Medium	
3.13	Adapt to User Prefe	erences				
	Success Criterion					
	prefers-reduced-mo	ome, prefers-contras otion CSS preference rint & scripting CSS	e queries if they will	benefit your website	or application.	
	Impact & Effort	Med	ium	Lo	ow .	
	GRI	Medium	Medium	Medium	Medium	
3.14	Develop a Mobile-F	rst Layout				
	Success Criterion					
	speeds), expanding	app to work on mobig to accommodate la nard work to ensure t	rger displays therea	fter (mobile-first). It is	s much more	
		enhancement and re- evice's capabilities, ology.	•	•		
		e of renewable energe e design techniques.		te or service to elect	ricity availability	
		g other indirect mether, application, or RS				
	Impact & Effort	Med	ium	Lo	w	
	GRI	Medium	Low	Medium	Low	
3.15	Use Beneficial Java	Script and Its APIs				
	Success Criterion					
	Improve sustainabil	ity through accessib	le and performant co	ode implementations	3.	
	When using an API, unrequired data is s	, make sure you only sent by the API.	call it when necessa	ary. On the other side	e, make sure no	
	Impact & Effort	Hiç	gh	Med	lium	

	GRI	High	High	High	High		
3.16	Ensure Your Scripts	s Are Secure					
	Success Criterion						
	Check the code for	vulnerabilities, explo	oits, header issues, a	and code injection.			
	Impact & Effort	Med	lium	Med	lium		
	GRI	Medium	Medium	Medium	Medium		
3.17	Manage Dependen	cies Appropriately					
	Success Criterion						
	when they are not r	from downloading a needed by checking ng them from your p	for unused depende				
	using libraries wher Check the package	t of JavaScript that he necessary. Consides size using a tool like ted rather than the w	er whether you can Bundlephobia, and	use a native JavaScı	ript API instead.		
	Regularly check dependencies and keep them up-to-date.						
	Impact & Effort	Med	lium	Lo	ow .		
	GRI	Low	Low	Low	Low		
3.18	Include Files That A	Are Automatically Expected					
	Success Criterion						
	Take advantage of documents.	the favicon.ico, robo	ts.txt, opensearch.x	ml, site.webmanifest	, and sitemap.xml		
	Impact & Effort	Lo	W	Lo	OW .		
	GRI	Low	Low	Low	Low		
3.19	Use Plaintext Form	ats When Appropriat	e				
	Success Criterion						
	Utilize standards su	ıch as ads.txt, carbo	n.txt, humans.txt, se	ecurity.txt and robots	s.txt.		
	Impact & Effort	Lo)W	Lo	OW .		
	GRI	Medium	Low	Medium	Low		
3.20	Avoid Using Depred	cated or Proprietary	Code				
	Success Criterion						
		ing deprecated form naintaining older sta			g if consumer		
	Don't use an older effectively.	standard if a newer r	ecommendation will	do the same job as	or more		
	Impact & Effort	Lo	ow .	Med	lium		

	GRI	Low	Low	Low	Low	
3.21	Align Technical Rec	quirements With Sus	tainability Goals			
	Success Criterion					
	implementation ma solution may use m	arefully) the requirem y use more human re nore system resource time (emitting less c	esources, but could es (and thereby prod	have a smaller footp uce more emissions	rint. A prebuilt	
	solution is actively Therefore, prefer na	oding from scratch i maintained, it may b ative components an of the impact of thir	e better optimized th d file systems to a V	nan what you could p	oroduce).	
	preference to a bull content entry forma uploaded, the emis serving pages (as the	use a code generatiky content managemat (like markdown) ar sions benefit comes hey are static) for ealitional computation	nent system. Becaus nd all of the compilat from the server not ch visitor. In the case	se SSGs often start usion is done before the having to place as need of a CMS, the dyna	using a minimalist ne website is nuch effort into amic nature of a	
	Plugins, extensions, and themes have been carefully reviewed and selected to maximize interoperability, accessibility, and performance. They are regularly audited over time to ensure continued compatibility.					
		omponents of the us pact, while respectin				
	Impact & Effort	Med	lium	Med	dium	
	GRI	Medium	Medium	Medium	Medium	
3.22	Use the Latest Stat	ole Language Versior	1			
	Success Criterion					
	Use the latest build	of your chosen synt	ax language and its	coupled framework.		
	Impact & Effort	Med	lium	Medium		
	GRI	Medium	Medium	Medium	Medium	
3.23	Take Advantage of	Native Features				
	Success Criterion					
	Use native function	s, APIs and features	over writing your ov	vn.		
	Impact & Effort	Med	lium	Lo	ow .	
	GRI	Medium	Medium	Medium	Medium	
3.24	Run Fewer, Simpler	Queries As Possible	9			
	Success Criterion					
	_	tion that is stored in atabase only once, a	-	•	•	
	Impact & Effort	Med	lium	Lo	ow	

	GRI	Low	Low	Low	Low		
4.1	Choose a Sustaina	ble Hosting Provider					
	Success Criterion						
	To assess the environmental impacts of hosting and detect overconsumption, some indicators should be monitored: energy / water usage, CPU / Memory usage, allocation of servers and CPU cores, etc. These indicators could be used to calculate metrics directly related to environmental impacts, such as Power Usage Effectiveness (PUE), Water Usage Effectiveness (WUE), and Carbon Usage Effectiveness (CUE). They could be displayed to visitors for transparency and monitoring reasons.						
				s possible, using then g-lifespan products.			
	Recover, recycle, a	nd upcycle waste ind	cluding equipment.				
	by wind or solar rat	her than from non-re	enewable sources). F	sible carbon intensity For example, Renewa ctricity comes directl	able Energy Credits		
	Compensate remaining emissions, keeping in mind that the priority should be to avoid then reduce them and only compensate for them if they cannot be avoided. Carbon credits may not be sustainable, therefore the effectiveness of an offset solution must be verified, shown to be both environmentally viable and sustainable, and part of a longer-term strategy to eliminate emissions entirely from a chain, benefitting the wider ecosystem.						
	Impact & Effort	Hi	gh	Med	dium		
	GRI	Low	Low	Low	Low		
4.2	Optimize Browser (Caching					
	Success Criterion						
	use the provided se		les to include and tw	e-fly server-side cach reak the file-type cac			
	Programming Interference example, through the	faces (APIs), or cook the use of a PWA (Pro	ies (if necessary) to ogressive Web Appli	rs, WebWorkers, sto reduce friction in the cation) to ensure tha and improve accessi	user-journey. For t an offline version		
	Impact & Effort	Hi	gh	Hi	gh		
	GRI	Medium	High	Medium	High		
4.3	Compress Your File	es					
	Success Criterion						
	Brotli or GZIP. Othe		ded server configura	e-fly server-side com tion files to include a			
				reducing the quality a server or content			
	Impact & Effort	Hi	gh	Lo	ow		

	GRI	Low	Low	Low	Low
4.4	Use Error Pages an	d Redirects Carefull	у		
	Success Criterion				
	_	r each error type to		cur, provide suitable n be identified to hel	
		fix them. A redirect of		ssary. Proactively se elp reduce the numb	
	Impact & Effort	Lo	ow .	Lo	ow .
	GRI	Low	Low	Low	Low
4.5	Limit Usage of Add	itional Environments			
	Success Criterion				
		environment is availa it online while unuse		ost of deploying an e	environment with
	Impact & Effort	Med	lium	Lo	DW .
	GRI	Low	Low	Low	Low
4.6	Automate To Fit the	Needs			
	Success Criterion				
			nt, testing, or compi n / continuous delive	lation, can be run au ery best practices.	itomatically, as is
	To reduce wasted p	processing cycles, ev	very automated task	is only run when nee	eded.
			automatically increa and to visitor demand	ase the capacity of tod.	he web server and
	concern for security bad actors and min logs, less data, less large increase in HT	y, performance, and imize bad behavior. seffect due to comp TP, email, and other trate data. Comprom	sustainability. Use s This results in subst romise, and more. T traffic as malicious	ent years. As such, i ecurity tools that aut antially less load on he result of compror code attempts to inf pically identified by	omatically block the server, fewer nised websites is a iltrate other
	Impact & Effort	Hi	gh	Med	lium
	GRI	Low	Low	Low	Low
4.7	Maintain a Relevan	t Refresh Frequency			
	Success Criterion				
	The frequency for redepending on visito		ache, locally stored	data, and the page) i	s defined
	Impact & Effort	Med	lium	Lo)W
	GRI	Medium	Medium	Medium	Medium

4.8	Be Mindful of Duplicate Data						
	Success Criterion						
	Backups of system	and user data are b	oth incremental and	secure.			
	Impact & Effort	Lo	ow .	Lo)W		
	GRI	Low	Low	Low	Low		
4.9	Enable Asynchrono	ous Processing and C	Communication				
	Success Criterion						
	_	ical processes and c under a given thresh		batched and launch	ed only when		
		nication protocols ar ocols (HTTP, FTP), a SSH).					
	Impact & Effort	Med	lium	Med	lium		
	GRI	Low	Low	Low	Low		
4.10	Consider CDNs and	d Edge Caching					
	Success Criterion						
	pre-generated reso	globally distributed urces in a fast and e lso another layer of i	fficient manner. Alth	ough they definitely	can increase		
	Check the CDN to	verify that it provides	a commitment to s	ustainability.			
	Choose a hosting p	provider with servers	located close to the	visitor.			
	as due to cache pa any benefits are ne	vice to host dynamic rtitioning, cross-orig gated by weaker per on of security and pr	in resource sharing (formance, the inabil	(CORS), and other bi	rowser mechanics, act, and the		
	Impact & Effort	Med	lium	Lo	ow .		
	GRI	Low	Medium	Low	Medium		
4.11	Use the Lowest Infr	astructure Tier Meet	ing Business Requir	rements			
	Success Criterion						
	Select infrastructure elements with the lowest requirements tier, meeting your service-level agreements. Avoid over-provisioning multi-datacenter, multi-zone, or distributed deployments if standalone instances meet the requirements. Also avoid provisioning infrastructure that will be under-utilized by provisioning for established average loads, ensuring reasonable resource utilization and autoscaling occurs as needed. Avoid provisioning for peak loads.						
	Impact & Effort	Med	lium	Med	lium		
	GRI	Low	Low	Low	Low		
4.12	Store Data Accordi	ng to Visitor Needs					

	Success Criterion					
	Remove unnecessary and redundant data from your servers, whether it is single-use (dark data) or abandoned.					
	Create data with an up old data needs t	-	cess data is a form c	of technical debt, and	d routinely cleaning	
	Use a data classific	ation / tagging polic	cy to make it easier to	o find, handle, and re	emove.	
	Store data only whe	en it is difficult to red	create.			
		tion, storage (off-site al backup providers	e), and rotation; sche	eduling during low-ad	ctivity hours and	
	Enable storage con available for downlo		ne fly (Brotli or GZIP)	and with long-term a	assets made	
	Impact & Effort	Lo	ow	Lo	ow .	
	GRI	Low	Low	Low	Low	
5.1	Have an Ethical and	d Sustainability Proc	luct Strategy			
	Success Criterion					
	_	G Statement that in	cly available Code of acludes language spe			
			e, and anything beyo our product or service		se guidelines and	
	_	n show how it effect d ESG practices over	tively governs impler er time.	mented digital sustai	nability, climate	
	_	s training decks and sustainable produc	d workshops it uses t t strategies.	to onboard new tear	n members on how	
			documenting your m g individuals make m			
	The organization ca	n show how it powe	ers digital products a	nd services with ren	ewable energy.	
	Impact & Effort	Hi	gh	Hi	gh	
	GRI	High	High	High	High	
5.2	Assign a Sustainab	ility Representative				
	Success Criterion					
	Choose and assign within your organiza	_	ee (with specific digit	al expertise) for the p	oroduct or service	
	Impact & Effort	Med	dium	Lo	ow .	
	GRI	Medium	Medium	Medium	Medium	
5.3	Raise Awareness a	nd Inform				
	Success Criterion					

	Make sure that all project stakeholders, including product teams, colleagues, and organizational decision-makers (managers and clients) are informed about and trained in your business's use of sustainable technology.							
	Encourages stakeholders to actively reduce their environmental impact by providing resources on sustainable design, practices, and concepts.							
	Impact & Effort	Med	lium	Med	lium			
	GRI	Medium	Medium	Medium	Medium			
5.4	Communicate the E	Ecological Impact of	User Choices					
	Success Criterion							
	Clearly communica settings based on t	te the ecological imp hose choices.	olications of visitor c	hoices and allow visi	itors to configure			
	Impact & Effort	Med	lium	Med	lium			
	GRI	Medium	Medium	Medium	Medium			
5.5	Estimate a Product	or Service's Environ	mental Impact					
	Success Criterion							
	Conduct a full life-c	cycle Analysis based	on the functional un	it defined in Guidelir	ne 5.15.			
	Estimate the enviro making (as a potent	nmental impact of yotial target goal).	our or your competit	or's current service t	to inform decision-			
	Impact & Effort	Effort Medium Medium						
	GRI	Medium	Medium	Medium	Medium			
5.6	Define Clear Organi	izational Sustainabili	ty Goals and Metrics	5				
	Success Criterion							
			The organization has defined and published a clear set of sustainability goals. It publicly communicates how it will meet these goals, including which performance metrics are important to help the organization and its various stakeholders thrive.					
	communicates how	it will meet these go	oals, including which					
	communicates how	it will meet these go	oals, including which keholders thrive.		s are important to			
	communicates how help the organization	vit will meet these go on and its various sta	oals, including which keholders thrive.	n performance metric	s are important to			
5.7	communicates how help the organization impact & Effort GRI	vit will meet these go on and its various sta Lo	oals, including which keholders thrive. w Low	n performance metric Med Low	s are important to			
5.7	communicates how help the organization impact & Effort GRI	vit will meet these go on and its various sta Lo Low Jsing Established Th	oals, including which keholders thrive. w Low	n performance metric Med Low	s are important to			
5.7	communicates how help the organization impact & Effort GRI Verify Your Efforts Usuccess Criterion The organization has	vit will meet these go on and its various sta Lo Low Jsing Established Th	pals, including which keholders thrive. Low ird-Party Business C	n performance metric Med Low Certifications	lium Low			
5.7	communicates how help the organization Impact & Effort GRI Verify Your Efforts Usuccess Criterion The organization had operational policies	tit will meet these go on and its various sta Lo Low Jsing Established Th	pals, including which keholders thrive. Low ird-Party Business Concre business sustain pport them.	Low Certifications nability certifications	lium Low and incorporated			
5.7	communicates how help the organization Impact & Effort GRI Verify Your Efforts Usuccess Criterion The organization had operational policies	tit will meet these go on and its various stand Low Low Jsing Established These as achieved one or meaning and practices to support the standard practices to support the stan	cals, including which keholders thrive. Low ird-Party Business Concre business sustain pport them. on through evolving	Low Certifications nability certifications	Low and incorporated es over time.			
5.7	communicates how help the organization impact & Effort GRI Verify Your Efforts Usuccess Criterion The organization had operational policies The organization management of the organization of the o	Low Joing Established These achieved one or mand practices to supaintains its certification.	cals, including which keholders thrive. Low ird-Party Business Concre business sustain pport them. on through evolving	Low Certifications nability certifications policies and practice	Low and incorporated es over time.			
5.7	communicates how help the organization Impact & Effort GRI Verify Your Efforts Usuccess Criterion The organization has operational policies The organization male Impact & Effort GRI	Low Jsing Established These as achieved one or mestand practices to supaintains its certificati	cals, including which likeholders thrive. Low ird-Party Business Concre business sustain poort them. on through evolving lium Medium	Low Certifications nability certifications policies and practice Med	Low and incorporated es over time.			

	The organization has dedicated training manuals, workshops, and materials that outline the ESG policies and practices it follows and how to implement them. While managing and maintaining these materials over time, adapting them as new policies and practices arise.					
	The organization incentivizes leadership, teams, and stakeholders to make progress toward the goals outlined in their training, including time for sustainability activities, recognition for completion, and so on.					
	The organization ar acts to minimize the		potential negative ex	kternal variables on t	he service, and	
	Impact & Effort	Hiç	gh	Med	ium	
	GRI	High	High	High	High	
5.9	Support Mandatory	Disclosures and Re	porting			
	Success Criterion					
	environmental impa		services, policies, an	actices for disclosing d programs in line w		
		oduces a publicly av nd environmental goa		t outlining its progres	ss against previous	
	and legislative police	by that promotes man er social and environ	ndatory disclosures	or emerging environ and reporting for em impact reporting, m	issions. This is	
		early identifies how it ashing, excluded da		mental impact, avoic ative techniques.	ling double	
	Impact & Effort	Med	ium	Med	ium	
	GRI	Medium	Medium	Medium	Medium	
5.10	Create One or More	e Impact Business M	odels			
	Success Criterion					
	documentation to id added value from the	dentify the impact it l nese activities, how i rojects, is generating	nopes to create, how t will measure result	eory of Change proce v it will generate reve s based on desired o acking and measurin	enue, shared, or outcomes; or in the	
	Impact & Effort	Hiç	gh	Med	ium	
	GRI	High	High	High	High	
5.11	Follow a Product M	anagement and Mai	ntenance Strategy			
	Success Criterion					
	The organization hamaintenance.	s documented polic	ies outlining how it a	approaches product	management and	
	The organization hat it manages.	s maintenance / sec	urity plans in place t	for all the digital proc	ducts and services	

	The organization appropriately resources products over time via staffing and budgeting to support refactoring code, addressing technical debt, new product features, ongoing testing, and product or service maintenance plans to continue supporting its customers, visitors, and other stakeholders.						
	The organization incorporates carbon and resource measurement into maintenance programs and can show measurable improvement over time.						
	Impact & Effort	Hi	gh	Lo	ow		
	GRI	High	High	High	High		
5.12	Implement Continue	ous Improvement Pr	ocedures				
	Success Criterion						
	_	s created policies an	-	ole continuous impro fforts over time.	vement and has		
				w process to ensure cal debt, and produc			
	application while als experimentation, su Limiting analytics to	so addressing the by uch as technical deb o only necessary feat	/-products and potet, product performartures to aid with dec	iteration) to analyze yntial consequences once, emissions, and uision-making, encourals and visitor needs	of ongoing related issues. raging visitor		
				reation of new function visited pages throug			
		security and policy u e updates from more		roduct or service lifed ary updates.	cycle, while		
	help your team (ma		etc) build capacity a	appropriate training nd learn new skills to			
	Impact & Effort	Hi	gh	Hi	gh		
	GRI	High	High	High	High		
5.13	Document Future U	pdates and Evolutio	ns				
	Success Criterion						
	The user-experience updating, or removi		e changes to the pro-	duct or service such	as adding,		
	Impact & Effort	Lo)W	Lo	oW .		
	GRI	Low	Low	Low	Low		
5.14	Establish if a Digital	Product or Service	Is Necessary				
	Success Criterion						
	Review and identify	whether your produ	ict or service aligns	with one of the U.N.	(SDGs).		
	Evaluate the desiral to ascertain whether		viability of the digita	l product or service	they wish to create		

	Determine that no existing digital product or service offers the same value. They have conducted analysis to understand whether a new product or service is necessary.					
	Consider any obstacles to using a product or service, such as accessibility, equality, technical, or territorial.					
	Impact & Effort High Low					
	GRI	High	High	High	High	
5.15	Determine the Functional Unit					
	Success Criterion					
	Consider and cond function throughout		ssment (LCA) to defi	ne the requirements	of your product's	
	Impact & Effort	Med	lium	Med	lium	
	GRI	Medium	Medium	Medium	Medium	
5.16	Create a Supplier S	tandards of Practice)			
	Success Criterion					
	The organization hat ESG principles.	as created specific p	olicies to vet potenti	al partners in its sup	ply chain based on	
	The organization ha		opliers to create, trac	ck, and measure coll	ective impact on	
		omotes its partnershorces		ilable place, along w	rith information on	
	Impact & Effort	Hi	gh	Hi	gh	
	GRI	High	High	High	High	
5.17	Share Economic Be	enefits				
	Success Criterion					
	The organization puliving wage.	ublicly commits to pa	aying employees, co	ntractors, and other	stakeholders a	
		s policies and pract meet its impact goa	•	ntivize stakeholders,	such as workers	
				nce with its resource rofit sharing, and so		
		lvocates for respons accountability related	•	supports employmer ic benefits.	nt rights,	
	Impact & Effort	Hi	gh	Hi	gh	
	GRI	High	High	High	High	
5.18	Share Decision-Ma	king Power With App	oropriate Stakeholde	ers		
	Success Criterion					
		ample, project mana	_	usiness objectives, a er and autonomy to		

	Impact & Effort	Lo	ow .	Hi	gh
	GRI	Low	Low	Low	Low
5.19	Use Justice, Equity	, Diversity, Inclusion	(JEDI) Practices		
	Success Criterion				
	prioritizes marginali		derserved communit	oractices with clear piles, including Black, eniors, and so on.	
		s an accessibility po e website, applicatio		cts and services and e.	d can show this via
	how this topic mani		products and service	nedules ongoing wor es (algorithmic bias,	
	The organization ca operations.	ın show measurable	JEDI improvement o	over time in its hiring	, leadership, and
	•	lvocates for respons oducts and services.	•	ng to JEDI practices	, especially as
	Impact & Effort	Hi	gh	Hi	gh
	GRI	High	High	High	High
5.20	Promote Responsib	ole Data Practices			
	Success Criterion				
	such as the General and so on. This poli	I Data Protection Re icy must be both acceptension needs, and	gulation (GDPR), Ca cessible for all visitor	and supports existir lifornia Consumer Pr s, including those w ish best practices to	rivacy Act (CCPA), ith accessibility
	_			on how it respects da provides the ability to	
	The organization su and responsible da		erging legislation rela	ated to data privacy,	data sustainability,
	Impact & Effort	Hi	gh	Med	lium
	GRI	High	High	High	High
5.21	Implement Appropr	iate Data Manageme	ent Procedures		
	Success Criterion				
	expiration dates an			e archived and deleter rchiving schedule wi	
	Enable users to cor	ntrol, manage, and d	elete their data, sub	scriptions, and acco	unts.
	Impact & Effort	Lo	ow .	Hi	gh
	GRI	Low	Low	Low	Low
5.22	Promote Responsib	ole Emerging Techno	logy Practices		

	Success Criterion					
	The organization ha	s public-facing polic	cies in place for eme	rging technologies.		
	The organization ca		ills workers as new	technologies and pra	actices potentially	
	The organization su technologies.	pports responsible l	egislation related to	automation and eme	erging	
	Impact & Effort	Hiç	gh	Med	lium	
	GRI	High	High	High	High	
5.23	Include Responsible	e Financial Policies				
	Success Criterion					
		as divested from foss responsible partners		ts banking, sponsors	ship, and other	
		ngages in flexible fina commodate long-terr		ble budgeting for its ance.	digital products	
	Impact & Effort	Hiç	gh	Hi	gh	
	GRI	High	High	High	High	
5.24	Include Organizatio	nal Philanthropy Poli	icies			
	Success Criterion					
	The organization has strategically aligned		giving policy and cre	eates philanthropic pa	artnerships with	
		ngages in free or volu nelping charities and		ch help its team learn ions build capacity.	new tools and	
	Impact & Effort	Hiç	gh	Med	lium	
	GRI	High	High	High	High	
5.25	Plan for a Digital Pr	oduct or Service's C	are and End-of-Life			
	Success Criterion					
	Establish clear, doc deletion, and so on		guidelines that inclu	ıde data disposal, ar	chiving, file	
	Impact & Effort	Med	lium	Med	lium	
	GRI	Medium	Medium	Medium	Medium	
5.26	Include E-Waste, R	ight-To-Repair, and F	Recycling Policies			
	Success Criterion					
	The organization haproducts whenever		place to recycle e-\	waste and repair owr	ned technology	
	The organization ha	s formed relationshi	ps with local partner	rs for e-waste recycli	ng and repair.	
	The organization bu	ıys refurbished equip	ment whenever pos	ssible.		

	Impact & Effort	Hi	gh	Med	lium		
	GRI	High	High	High	High		
5.27	Define Performance	e and Environmental	Budgets				
	Success Criterion	Success Criterion					
	environmental budg	The product team has defined, baselined, and documented a clear sustainability and environmental budget criteria that covers the page, user-journey, and digital service levels and metrics (such as a CO2.js score) that are approved by relevant product stakeholders.					
	Use tools such as a performance budget to determine the maximum size (goals) your app or website can weigh to reduce the data transfer and HTTP request impact (using metrics like Google Lighthouse).						
	The product team of and reduced emiss		v how much the bud	lgeting process impr	oved performance		
	The product team i	nvests in resources t	to build capacity and	maintain the budge	ts over time.		
	Impact & Effort	Med	lium	Med	lium		
	GRI	Medium	Medium	Medium	Medium		
5.28	Use Open Source 1	Tools .					
	Success Criterion						
	_	as a clear open sourc ices it supports surro		at outlines how it use e development.	es open source		
	The organization had principles.	as a track record of o	collaboration and co	mmunity-building arc	ound open source		
	The organization re	gularly contributes to	o open source comn	nunity-based project	S.		
	Impact & Effort	Hi	gh	Hi	gh		
	GRI	High	High	High	High		